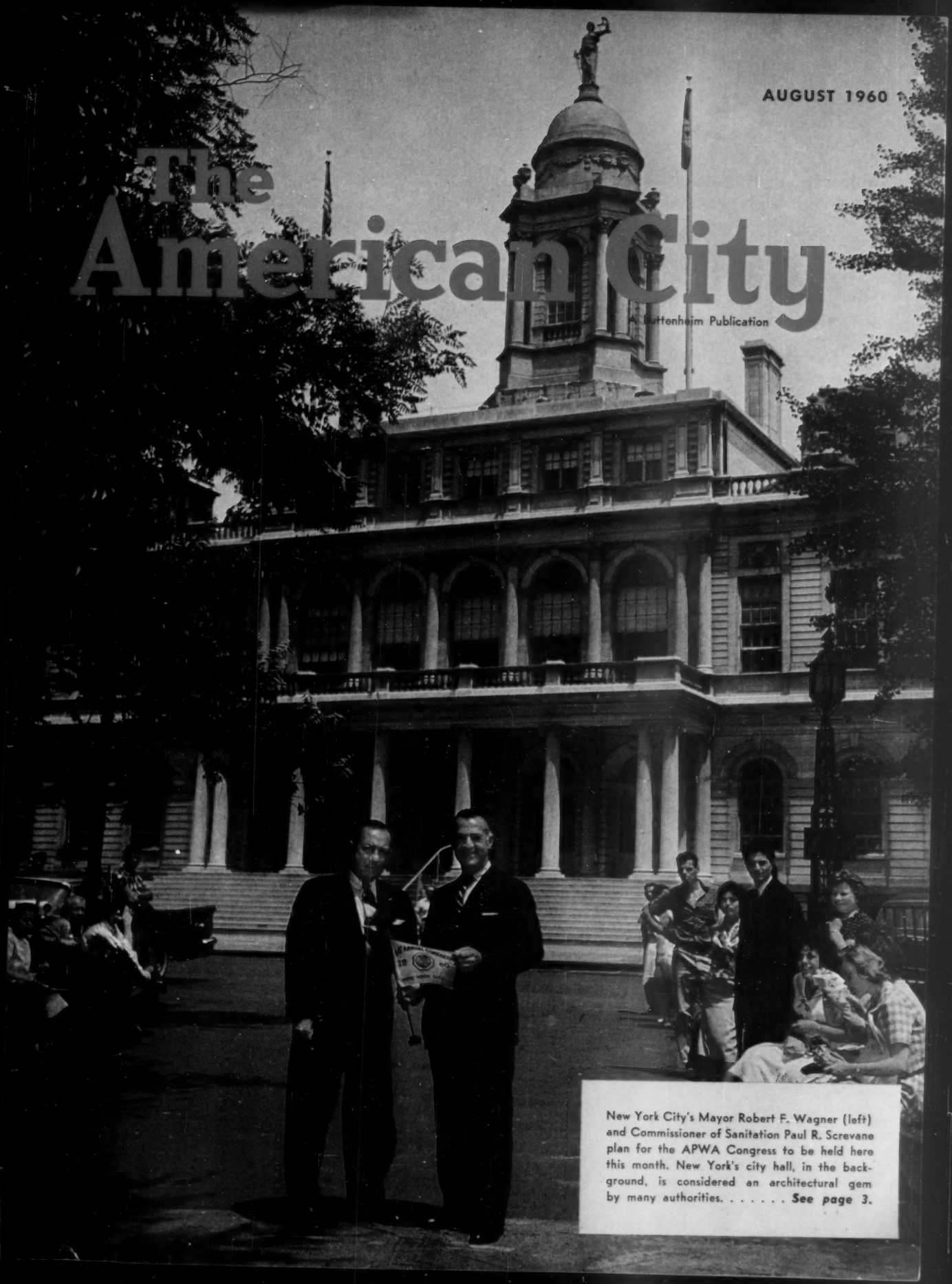
AUGUST 1960

The American City

A Buttenheim Publication



New York City's Mayor Robert F. Wagner (left) and Commissioner of Sanitation Paul R. Screvane plan for the APWA Congress to be held here this month. New York's city hall, in the background, is considered an architectural gem by many authorities. . . . . *See page 3.*

LOUISVILLE paves arterial streets like Broadway with Asphalt

Broadway is one of the most heavily traveled east - west thoroughfares in Louisville, Ky. Like other major traffic arteries of this bustling midwestern city, it has a plant-mixed Texaco Asphalt pavement. This is the same resilient, rugged pavement serving such busy municipal arteries as New York City's East River Drive, Philadelphia's Vine Street Expressway and Providence's East Providence Expressway.

Plant-mixed Texaco Asphalt paving is the ideal pavement for arterial streets. It has the rugged durability it takes to withstand punishing impact year after year with minimum maintenance. It is speedily laid and opened to traffic, because it requires no time-consuming curing period. Thanks to its resilience and freedom from expansion joints, it has a velvet smooth riding quality motorists appreciate.

In addition to the heavy-duty plant-mixed pavement on Broadway in Louisville, Texaco Asphalt products offer city officials a number of intermediate and low-cost types of paving or surfacing for streets, airports and parking areas. One of these types is exactly suited to the requirements of your particular paving problem. If you would like assistance with such a problem, our 55 years of Asphalt experience is at your service.

Helpful Asphalt Booklets

Useful information for the city official on the various types of Asphalt paving for streets, airports and parking areas is supplied in two Texaco brochures. Write our nearest office for copies. No obligation.

H. K. WILLIAMS supplied asphalt mix for Broadway pavement.

Constructing a plant-mix Texaco Asphalt pavement on Louisville's Broadway, one of a number of this city's principal arteries to be Texaco-paved.

TEXACO INC., Asphalt Sales Div., 135 E. 42nd Street, New York 17, N. Y.

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The American City
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AUGUST 1960

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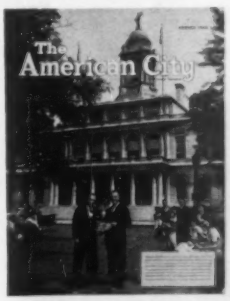
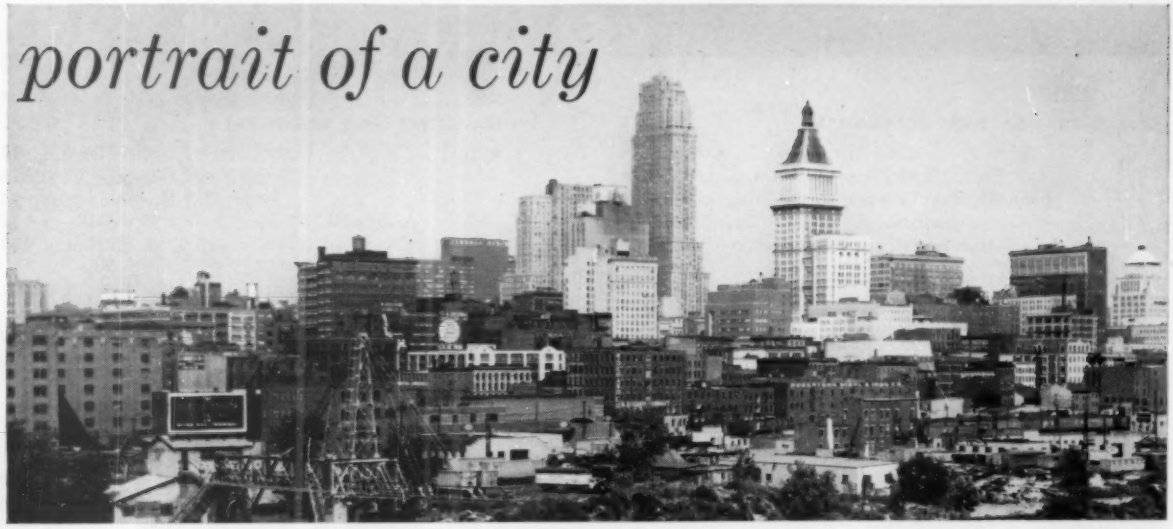


Cover Picture

The nation's municipal engineers and other officials attending the American Public Works Congress in New York this month will be surprised to find that New York has probably the smallest city hall of any great city in the nation. The city maintains this graceful building, where Mayor Wagner has his offices, for its historic and artistic interest. Two towering buildings nearby house most of the customary city-hall activity. The spot where this picture was taken is probably the only one where the front of the city hall would not be shown with a background of tall buildings

The area has much in addition of interest. Adjacent is Brooklyn Bridge whose construction wrote one of the greatest and most dramatic chapters in bridge-building history. Just south of the little park is St. Paul's Church, the church where George Washington worshipped. New York's newspapers once were clustered around City Hall Park and a statue honoring Benjamin Franklin, who was a printer by trade, may be found here. An article by Paul R. Screvane, Commissioner of Sanitation, describing his department's varied activities, appears on page 175.



Outdoor telephones mean new revenue...new service

The City is Cincinnati, Ohio.

In 1955 the City Council authorized the installation of 72 outdoor telephones on city property. Today, Cincinnati has 354 outdoor phones handling almost 1,800,000 calls annually. By 1962, city officials expect to have 540 outdoor phones and many times the present revenue.

Such rapid growth was possible only because the citizens of Cincinnati enthusiastically welcomed the convenience and protection provided by outdoor telephones. City officials are equally enthusiastic about the steadily increasing revenue provided by a service that doesn't add to the tax burden of the city.

To see how a public telephone plan can be custom designed for your city, call your Bell Telephone manager. A representative will visit you at your convenience.

BELL TELEPHONE SYSTEM

Get the facts about these convenient outdoor telephones: the walk-up phone, the drive-up phone and the outdoor booth.

Volume 75 Number 8

The American City

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ASSOCIATED PUBLICATIONS

CONTRACTORS and ENGINEERS	OVERVIEW	
Municipal Index	MART	AMERICAN SCHOOL AND UNIVERSITY

LETTERS TO THE EDITOR

"Or Equal" Clause Possibly Illegal

Your editorial in the June 1960 issue of THE AMERICAN CITY on the use of the term "or equal" pointed out the necessity for preparing proper specifications before any bids are solicited—a point that most municipal purchasing personnel have been trying to sell engineers for years.

In your discussion on the weakness of the term "or equal" you might also have mentioned the possible illegality of its use. Most cities have statutory requirements for competitive bidding. Often specifications are written identifying equipment or supplies by brand name or calling for a particular type of equipment. Such specifications are, of course, restrictive and illegal and the adding of "or equal" does not *per se* cure such illegality.

The determination of equality in awarding a contract with such specifications gives the awarding authorities an opportunity to exercise favoritism, since it is very seldom that the products bid on are actually equal in all respects. The problem of equality has become more acute in recent years with the growing complexity of equipment and materials.

In order to comply with the legal requirements for competition, specifications must be non-restrictive, complete, and as definite as possible as to the points to be considered in awarding contracts.

The elimination of brand names is most desirable and whenever possible, specifications should be written on a functional or descriptive basis. Reference to brand names is sometimes unavoidable; in all such cases, an absolute minimum of two acceptable brands should be referred to, with the stipulation that they are used for illustrative purposes only as to size, type, construction, etc., desired.

W. L. LINTZ
Purchasing Agent
Los Angeles, Calif.

Those Durable Poles

Your little story about our street lighting system in the Municipal Notebook (May 1960, p. 34) harks back to an earlier article which we wrote in 1957 regarding lighting standards in sea coast areas (THE AMERICAN CITY, May 1957, p. 175). Your readers might like to know the 334 Hubbard aluminum standards of Alcoa alloy T356T6 and the shafts of aluminum Alcoa alloy 63ST6 have stood up exceedingly well. No sign of corrosion has appeared. Since this installation, we have installed a considerable number of new aluminum poles of the same Alcoa alloys but manufactured by Pfaff & Kendall, Inc. As was the case with Hubbard poles, no corrosion has been observed on either the old or the new installations.

It is now proposed that we go into a further street lighting installation of 80 standards.

CHESTER M. KIRSOP
City Electrician
Olympia, Washington

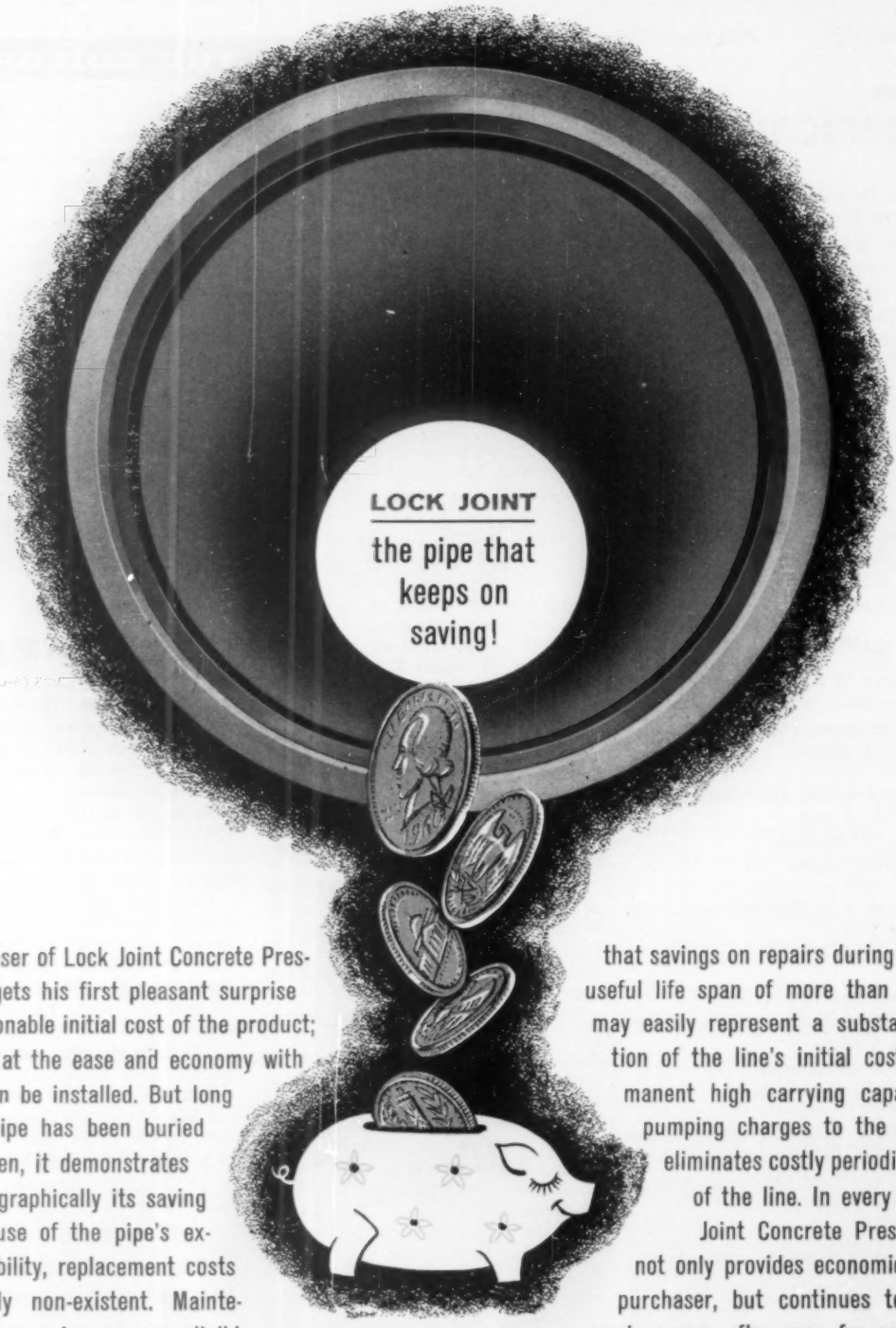
Metropolitan Public Transport

We of the Burlington were rather surprised and disappointed to note that our railroad was omitted from the list of carriers providing commuter service in the Chicago area, in the article on pages 125 and 127 of your June 1960 issue ("Public Transport in Five Great Metropolitan Areas—Part I").

For your information, the Burlington has been operating commuter service to the western suburbs of Chicago since the 1870's. Today we run 33 commuter trains in each direction between Chicago and Aurora, Illinois, on weekdays (a slightly smaller number on Saturdays and Sundays). All of the coaches used in our suburban service have been air conditioned since 1951 and all trains have been diesel-powered since 1952. In 1950, we were the first railroad in the Chicago area (and perhaps the first nationally) to introduce stainless steel, double-deck suburban cars, and we now have 60 of these cars in commuter service, in addition to 88 conventional coaches, all of which have been modernized with new lighting, seating, and air conditioning in recent years. The service has been further improved in the past two years with the installation of additional high speed cross-overs, advanced signal equipment, and automatic crossing gates.

Our service has been very favorably received by residents of the

(Continued on page 18)



The purchaser of Lock Joint Concrete Pressure Pipe gets his first pleasant surprise at the reasonable initial cost of the product; his second at the ease and economy with which it can be installed. But long after the pipe has been buried and forgotten, it demonstrates even more graphically its saving ways. Because of the pipe's extreme durability, replacement costs are virtually non-existent. Maintenance requirements are so negligible that savings on repairs during the pipe's useful life span of more than 100 years may easily represent a substantial portion of the line's initial cost. Its permanent high carrying capacity cuts pumping charges to the bone and eliminates costly periodic cleaning of the line. In every way Lock Joint Concrete Pressure Pipe not only provides economies for the purchaser, but continues to pile up savings year after year, for generations.

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Efficient Cities

Automation, which is a sophisticated word for mechanized efficiency, will play a dominant part in the discussions when the Congress of the American Public Works Association meets this month in New York. This is certainly appropriate and it emphasizes the tremendous trend towards increased efficiency in those services provided by local governments. One has a hard time measuring this increase precisely. No one who studies local governments even casually can miss the trend.

Look for example, at the way the predominantly municipally owned water works compare with industry at large. Only a few years ago industry had to invest an average of $10,000 for every man employed. However, they have become more efficient, they now invest nearly $20,000 to build enough plant facilities for each man employed.

However, for the water-works industry, well over $100,000 is invested for every man employed. This is a figure hard for any major industry in the nation to match. The efficiency of these water works in lowering the labor requirements represents a degree of efficiency that should rate high, particularly in view of the tremendously important service that they provide.

There are many other indications of efficiency in local governments. Phoenix, Ariz., for example, has experienced a population growth of more than 125% in the last decade. However, at the same time, its city payroll has grown by only 93% and these employees are now working only a 40-hour week instead of 48 hours. Orlando, Fla., saw its population rise by 25% in the last three years, but it increased in staff of employees by only 11%. Moreover, both cities have more duties to perform today and higher standards of performance to maintain than they ever had in the past.

Milwaukee offers still more evidence that the dollar is watched carefully when it works for local governments. In the past ten years, property taxes in this city have risen 46.3%. However, at the same time, the average hourly wage in the Milwaukee area has risen 48.4%. Thus, property taxes take a smaller slice out of the average man's paycheck in Milwaukee today than they did ten years ago.

Local governments overflow with examples of resourcefulness and efficiency. We have seen cities adopt the use of compactor refuse trucks and lower their labor costs accordingly; we see a municipally operated water plant in Philadelphia that is virtually a push-button operation; we see the great expense of manual sweeping of streets disappear even in exceptionally small cities, replaced by the large power sweepers; we see snow being plowed and picked up mechanically instead of by a hastily mustered force of hand laborers; we see tax bills and municipal bookkeeping operations quickly adapted to the latest in mechanized procedures; we see resourceful and ingenious use of power equipment to pick up leaves, to move park benches and other material. It seems almost monotonous now to mention again the imaginative use of the sanitary fill to reclaim waste lands in and around a municipality and turn them into useful property.

When the nation's municipal engineers and public works officials meet at this APWA Congress, we can confidently expect them to continue these discussions of methods that lead to greater efficiency. And few of those present will think for a moment about the great responsibility that they have to a people of a free world. Most will merely accept this search for efficiency as a matter of course.

As we know, the democratic society of free people is being tested today. Unfortunately, we hear the thought that in today's tense world, a democratic society of free people cannot compete against the monolithic drive of totalitarian power. Moreover, the evidence is plain that when free people lose their rights, surrendering them to dictatorial powers, the great privilege of independent local government with even a semblance of home rule dies also.

These acts by our cities prove that local governments in a free society *can* be efficient. They prove it by their deeds. And these deeds help us look to the future with confidence.

It's a fact...

PACKER BODIES Cost 1/3 Less Than Rear Loading Units of the Same Rated Capacity, Yet Hold Yards More of Compacted Refuse!

How is this possible? The answer is *simplicity* of design and operation. First, the M-B Packer costs ⅓ less because there is no heavy, complicated hydraulic tailgate involved. A simple, powerful packer plate moves through the entire length of the body compacting all types of refuse — then quickly pushes out the load through the big rear doors. Secondly, the new vertical packer plate design allows up to *4 cu. yds. of useable area above the rated compacted capacity of the body!*

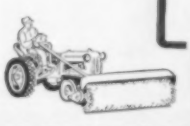
Because of M-B's square, van-type body design which eliminates dead weight, the compactor body can be mounted on a low-cost, popular size truck chassis with resultant savings in lower operating and maintenance costs.

There's a size for every need: 14 to 24 cu. yd. truck mounted; 32 and 38 cu. yd. in both the Trail-Pack, self-powered trailer type models and the M-B Contain-O-Pack Self-Loading Packer system for "containerized" refuse handling.
From every angle, you're dollars ahead with M-B Packer Bodies — the choice of hundreds of private haulers and municipalities.

Money-Making Features

- **FAST OPERATION:** rugged, bulldozer-type packer plate thoroughly compacts refuse, garbage and trash . . . the complete cycle takes only a few seconds.
- **COMPLETE SAFETY** because of side loading from the curb, eliminating danger to collectors from passing traffic. All compaction mechanism located inside the body — safely out of operator's reach.
- **PACKS ANYTHING** — barrels, crates, cartons, etc. without pre-crushing. Use as general purpose truck for hauling snow, ashes, park equipment, nursery stock, leaves, etc.
- **CONTROLLED DUMPING:** full load is pushed out quickly and safely by packer plate *without raising the body* as in hydraulic-type units.
- **LESS DEPRECIATION** — low truck cost, low body cost and less wear and tear adds up to less depreciation of your original investment.
- **MORE BLOCK COVERAGE** — progressive compaction, easy loading means more tonnage per load — fewer trips to the dump or incinerator.

The proof is in a demonstration. See your distributor or write the M-B Corporation, New Holstein, Wisconsin.



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Manufacturers of Quality Municipal and Construction Equipment Since 1907

PACKER BODIES LINE MARKERS SWEEPERS

Cornelia Park provides a relaxing setting for Edina's municipal pool. The pool has decks for sunning and lounging and underwater lighting for swimming at night.

The Family Swim Plan

In our village of a little more than 28,000, we offer, to residents only, a family-plan season ticket to our swimming pool at $10. Under this plan, parents, and children under 19 years, can enjoy unlimited swims throughout the season. Tickets are non-transferable and do not include relatives or guests. The village also offers to its residents a $4 season ticket which covers the purchaser only and is non-transferable. Single admissions, open to the general public, whether residents of Edina or not, are 75 cents each. Now in its third year, the pool receipts have exceeded operating expenses each year.

It is probably obvious why we went to the family-season ticket basis. Since we are so close to other communities, some felt that we should open our pool only to residents of Edina. The majority felt that because we had used the facilities of other communities for many years without payment, we should not be the first to erect barriers. The general reaction to the present basis has been excellent. We actually have had only a small percentage of non-Edina people using the pool, even though it is close to two other suburbs.

During the 1959 season, we sold a total of 2,895 season tickets, of which nearly 75% were the family-plan type. Our total attendance at the pool was 160,862 and nearly 90% were the season-ticket holders and members of instruction programs. Only 10% of our swimmers were represented by cash admissions.

We financed the pool originally by a $200,000 bond issue which was approved by vote as part of an $850,-000 park acquisition and development program, in 1957. We obtained the site partially by dedication from subdividers and partially by purchase. The pool itself cost just under $200,000. We also paid $50,000 for approximately 25 acres of land and 30 acres of ponds of which the pool takes about three acres.

The main pool was designed by Larkin and Associates of Kansas City, Mo., and measures 60 feet wide and 165 feet long, plus a diving bay of 35 by 50 feet. Its depth varies from 3½ to 12 feet. The water can be heated to provide favorable swimming for a rather long season. The pool will accommodate 600 swimmers in the water. It has underwater lights for night swimming and has spacious decks for sunning and lounging. It is kept pure and sparkling by a Waterite gravity diatomaceous earth filler.

We also have a wading pool adjacent to but separated from the main pool. It is divided into two sections; one with water varying in depth from 9 to 12 inches and the other, 18 to 24 inches deep.

We have application forms and blanks for the family-swim plan and will send copies to interested city officials who may like to study them for possible use in their communities.

WARREN C. HYDE
Village Manager
Edina, Minn.

Machines Oust the Ponies In the Toledo Zoo

Live ponies had to give way to their mechanized, and more exciting counterparts in the Toledo Zoo. A 36-foot, 30-horse merry-go-round has grossed more than three times as much as the ponies each season, so the ponies had to go. The success of the merry-go-round prompted the addition of a helicopter amusement ride in 1959 which almost paid for itself the first season of operation. Both rides are products of Allan Herschell Company, Inc., of North Tonawanda, N. Y.

The zoo also operates a miniature train. Gross revenue from all three amounted to more than $33,000 last summer. ◄◄

SPECIAL REPORT TO CATERPILLAR OWNERS:

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Parts you can trust
... cost less per hour

announcing...

BONDED BUY PARTS ASSEMBLIES

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PARTS ASSEMBLY
Guarantee Bond

Know All Men by these Presents,

that _____

of _____ (hereinafter called Seller),

is held and firmly bound unto _____

of _____ (hereinafter called Buyer)

in the sum of not exceeding the lesser of FIVE THOUSAND DOLLARS ($5,000.00) or Seller's price, with respect to each parts assembly described below, for the payment of which Seller hereby binds itself, its successors and assigns by these presents.

The Condition of this Obligation is such that Whereas Seller has sold to Buyer the below-described parts assembly or assemblies originally manufactured by Caterpillar Tractor Co. and reconditioned in accordance with practices recommended by Caterpillar Tractor Co.:

DESCRIPTION	PART NUMBER	SERIAL NUMBER	SALE PRICE

And Whereas Seller guarantees each said parts assembly against unsatisfactory performance due to defective material or workmanship for _____ days after the date of sale shown below (herein referred to as the guarantee period), the obligation under this guarantee being only to repair or replace, as Seller may elect, any said assembly which proves defective in material or workmanship under conditions of normal use during the guarantee period at Seller's expense (including cost of all necessary materials and labor) up to a maximum of the lesser of Five Thousand Dollars ($5,000.00) or Seller's price, with respect to each said assembly, except that the cost, if any, of transporting each said assembly from and to Seller's place of business shall be paid by the Buyer.

Now, Therefore, if Seller, its successors and assigns shall in all respects well and truly perform the obligation under the guarantee recited above, then this obligation shall be void; otherwise to remain in full force and effect.

THE ABOVE GUARANTEE IS VOID, AND SELLER SHALL BE UNDER NO OBLIGATION THEREUNDER, IF CLAIM IS NOT MADE TO THE SELLER WITHIN THREE (3) DAYS AFTER DISCOVERY OF THE DEFECT UPON WHICH THE CLAIM IS BASED.

You can have complete confidence in any Parts Assembly Exchange or Rebuilt Unit carrying the dealer's new Bonded Buy label. You'll receive a Guarantee Bond, backed by the Lumbermens Mutual Casualty Company of Chicago, Illinois, giving the guarantee conditions agreed upon at time of sale. This is further evidence that a Caterpillar Parts Exchange or Rebuilt Assembly is in first-class condition—another way of expressing the careful and thorough workmanship that goes into each of these reconditioned assemblies.

The cost? It compares favorably with the cost of doing the reconditioning work yourself. Often less . . . because of the availability of special equipment and servicemen's skills in the dealer's shop. Your final net cost is based on parts and labor necessary to put your worn assembly in A-1 condition—same as the exchange unit you receive.

Here's why Cat Reconditioned Assemblies save you money. You trade down time for more *go* time. Simply:

1. **Call your Caterpillar Dealer and arrange for the Parts Assembly you need.**
2. **Remove your worn assembly and install the reconditioned unit.**
3. **Put your machine back to work immediately and return the worn unit to your dealer.**

Any way you look at it, a Bonded Buy Parts Assembly is a good deal. You get a dependable unit . . . guaranteed in writing. The cost is approximately the same had you done the work yourself. Time saved can be converted to cash because your machine's working and earning. Contact your Caterpillar Dealer today. Find out what assemblies he stocks (new items are being added daily).

SERVICE TIP: Never allow your present machine components to become worn to the point where reconditioning is impossible.

CATERPILLAR

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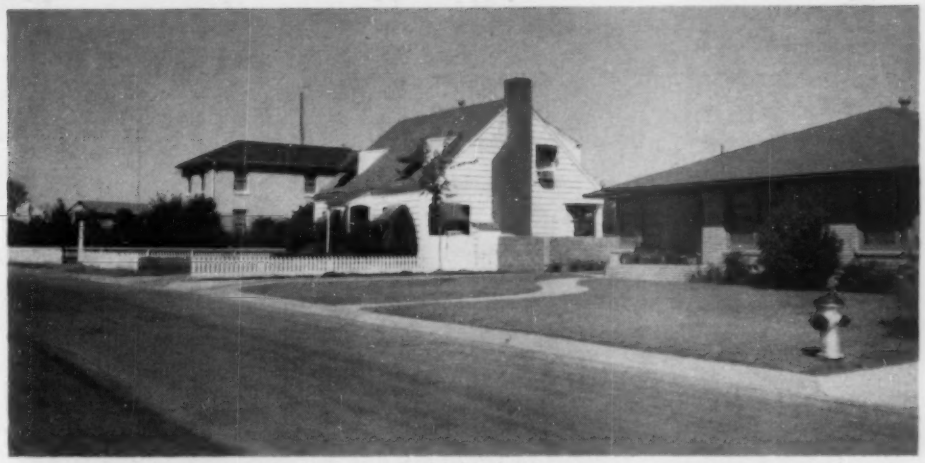


Temple's reconstruction program produces clean, neat streets like this.

Surface Treatment Doesn't Always Do

In Temple, Tex., the older residential streets built with two-course penetration type surfacing haven't been able to stand today's traffic. Consequently the city has a substantial program of reconstruction that requires about 75% of the street-maintenance budget.

Each year, prior to the time that we receive the annual budget requests from the department heads, City Engineer John J. Roark and Street Superintendent Ed Candler make a survey of all existing streets. They rate each according to its condition and the amount of traffic that it now carries and probably will carry after reconstruction. They then prepare a list that establishes priority and estimates the reconstruction cost of each street recommended.

They then begin the reconstruction program just as soon as the council approves the yearly budget. They extend priority listing for five years so that each homeowner will know when his street will be rebuilt.

Immediately after establishing the reconstruction program, the city proceeds to assess the cost of curb and gutter, where none exists, against the abutting property owners. The city bears all costs of paving reconstruction, storm sewers and curb-and-gutter at intersections. Rarely does a property owner object, since virtually all recognize the definite need for the work.

In residential areas, reconstruction pavement consists of:

3 inches of pit-run gravel sub-base
6 inches of crushed limestone rock base
1½ inches of hot-mix ashpaltic concrete surface

On major or collector streets, the crushed limestone layer is increased to 8 inches and the hot mix, to 2½ inches. The city purchases the hot asphalt mix used in this program.

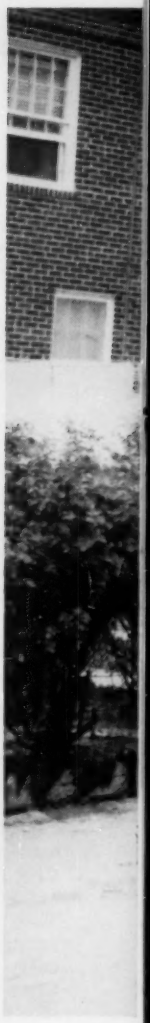
H. K. Dodgen
City Manager

A Caterpillar HT4 tractor loader helps regrade an old street needing reconstruction.

A crushed limestone rock base gives the street bearing strength for the traffic.

Do your specifications demand

BIG SIX Performance?



They should. Whatever the size of your city, Big Six Performance by the Gar Wood Load-Packer 600 will give you lower operating and maintenance costs, faster, more productive operation, years of extra service.

Big Six Performance represents advanced engineering features in the interest of efficiency and economy – features that work for you and your budget in these six important ways...

1. **FASTEST OPERATION**—Crew starts reloading in just 4 seconds... full cycle takes only 10 seconds. More speed means better service.
2. **GREATEST COMPACTION**—Direct thrust compaction packs more per yard than any competitive unit.
3. **BIGGEST LEGAL PAYLOADS**—Minimum dead weight. Front-mounted telescopic hoist eliminates the need for heavy, conventional hoist sub-frames. Result: less weight and greatly improved weight distribution.
4. **LARGEST, LOWEST HOPPER**—Big 1½ cubic yard, 74" wide hopper, plus low loading height speeds collection, makes crew's job easier. Three crewmen can load simultaneously.
5. **SAFEST, MOST DEPENDABLE OPERATION**—Controls are simple, foolproof. Operator has positive control, can stop mechanism instantly. Engineered for less maintenance with fewer moving parts, less linkage, fewer adjustments.
6. **GREATEST ECONOMY**—Big hopper, fastest loading cycle means less fuel consumption ... less wear and tear on packer, chassis and engine.

GAR WOOD PAX-ALL REFUSE CONTAINERS snap quickly on or off the Load-Packer 600 without use of chains or cables. Complete hydraulic operation is controlled with one lever.

The Load-Packer 600 is the economical answer to refuse collection in your city. Your Gar Wood - St. Paul truck equipment distributor can prove it to you.

Always specify Gar Wood...the most economical and efficient

GAR WOOD - ST. PAUL hoists and bodies deliver longer, dependable service with a minimum of maintenance. The rugged, precision hydraulic system handles controlled dumping smoothly, quickly, accurately... under the toughest conditions.

GAR WOOD - BUCKEYE wheel- and ladder-type ditchers offer modern features like these as standard equipment at no extra cost: hydraulic conveyor drive, hydraulic digging wheel hoist, modern power train and simplified group controls.

equipment you can buy!

GarWood

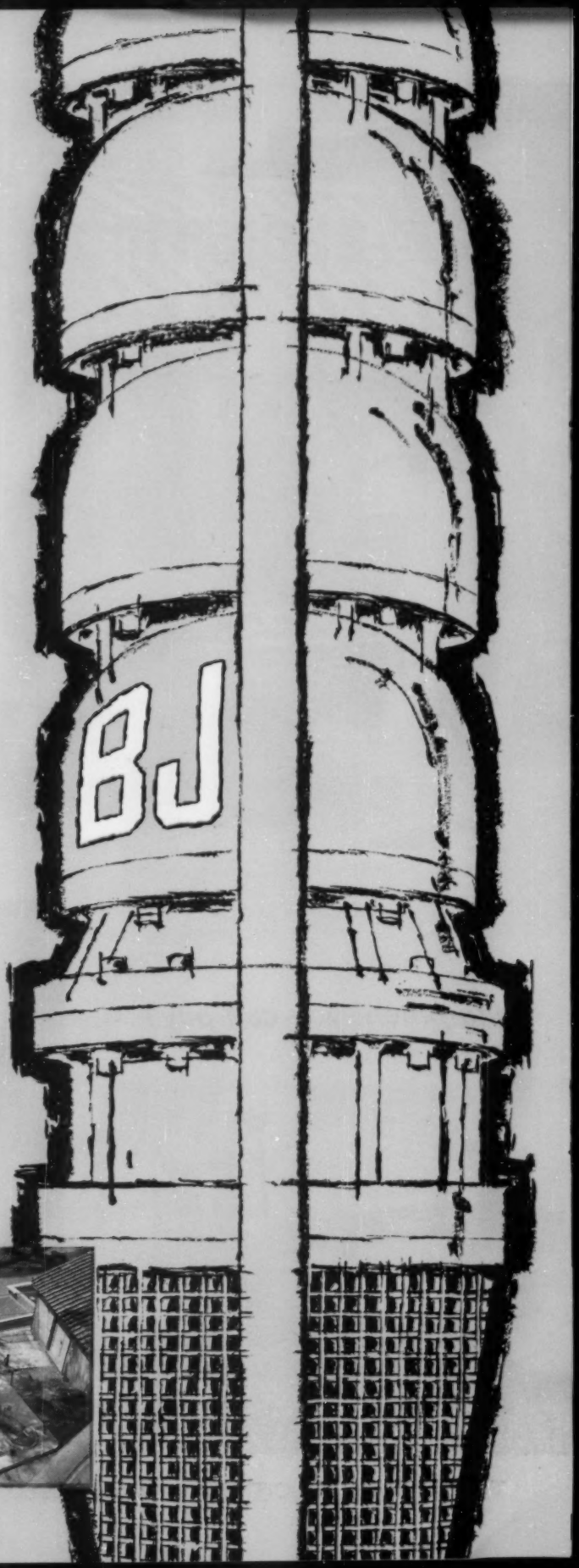
INDUSTRIES, INC.

Wayne, Michigan

Plants in Wayne and Ypsilanti, Mich. • Findlay, Ohio
Mattoon, Ill. • Richmond, Calif. • Exeter, Penna.

GAR WOOD'S rugged ¾ yard machine gives you extra capacity for excavating and material handling. Independent travel lets operator hoist or swing while moving . . . built-in chain crowd puts full engine power into every bite, simplifies conversion.

Quality *costs less* in the long run!



BJ Submersible Pumps

Nowhere is quality more important than in a submersible pump installation where both pump and motor operate down-hole. And that's where BJ quality pays off!

Sealed for life, no adjustments or routine maintenance is required...no noise, no pump house needed, and there is no danger of vandalism or contamination of the well.

As a pioneer in submersible pumps since 1928, BJ manufactures all three basic components—pump, motor and seal—and offers complete unit responsibility with *the* quality submersible pump. Available in capacities from 20 to 20,000 GPM, heads to 1,800 feet and motors to 450 HP.

BYRON JACKSON PUMPS, INC.
Subsidiary of Borg-Warner Corporation
P.O. Box 70, Lawrenceburg, Indiana
P.O. Box 2017 A, Terminal Annex, Los Angeles 54, California
Offices in Principal Cities

Since 1934, Beverly Hills, California has installed a total of 21 silent BJ Submersibles in some of the most exclusive residential areas in the U.S.

This is one of three billing clerks who keep Saginaw's water, sewage and other accounts in order.

Only Three People Needed

Three city employees do all of our water and sewage disposal billing in Saginaw, Mich. They are located in an office in the Water and Sewer Maintenance Shop about one mile from the City Hall. However, we keep close communication between the billing office and the balance of the division in the City Hall by telephone and by a Tel-Autograph system of transcribing messages for greater accuracy.

Bills are prepared on printed post-cards by the use of Addressograph equipment and a Burroughs Sensimatic billing machine. We also process from 800 to 1,200 work orders each month in the same office. They include information on customer moves, special meter readings, investigations of high bills, meter changes, etc. From 200 to 300 final bills and 100 bills for larger users are prepared each month. The 25,500 city and the 8,600 suburban services are billed quarterly with one-third being completed each month.

And as a final service to the city, this same office also maintains an Addressograph file on the 850 city employees. We use this to prepare weekly and semi-monthly time and payroll lists for the various city departments and divisions in getting payroll and cost information ready for the Finance Department.

C. A. MILLER
City Mancger

Fire, Water and the City

The problem of inadequate water supplies for fire defense seriously affects half of the 125,000,0000 people now receiving water from public sources.

Although the United States still has enough water, a nation-wide study by the National Water Institute* shows alarming deficiencies in the 19,000 water utilities which store, pump, and deliver this essential commodity. These deficiencies affect the availability of water not only for fire service, but for household, business and industrial uses as well.

The Institute estimates that by 1985 the over-all national need for water will increase by 270%. This increase is needed not only for social and economic expansion of the nation, but to protect that growth from the hazards of fire as well.

Water is basic for modern fire fighting. For example, in the grading schedule of the National Board of Fire Underwriters used in cities of 25,000 population and over, 34% of the maximum possible 5,000 points are assigned to water supply. Local fire insurance rating organizations apply the same formula in setting insurance rates for the smaller cities.

Supply alone is not the answer. The distribution system, pumps, and elevated storage capacity should be able to maintain service even if one or two pumps are out of order. Fire hydrants must be spaced in relation to their possible use; not more than 300 or 400 feet from the buildings to be protected and 100 feet closer if water comes directly from the hydrant.

Despite the dramatic implications involved in the need for adequate water supplies and facilities, the subject has not received the proper public attention. This means voter concern, for the voter often determines whether a local bond issue for waterworks improvements is issued or not. Often this vote is registered without voters realizing the effect it will have on the growth—or stagnation—of the community nor the small cost involved to promote such growth. Also, seldom is it called to the voters' attention that the cost of not improving the water system oftentimes runs higher than that of the proposed improvement program. Many communities can attest to this, for industry has moved out—or refused to move in—because of inadequate water facilities. On the other hand, all other things being equal, it is the city with an abundant supply of good water and the ability to deliver it that will gain industry.

Unfortunately, public utilities provide a service that is taken for granted until it becomes inadequate. Yet water facilities in general have been inadequate since 1940. In view of this fact, it is surprising that utilities in the United States (and in most cases this means cities) are allocating only half the money required for present deficiencies and anticipated needs. ◄◄

* A public information service of the Water and Sewage Works Manufacturers Association, Inc., 165 Broadway, New York 6, N. Y.

a giant needn't speak to be heard...

. . . he need only be a giant.

he need only do the things
that only a giant can do . . .
and he will be listened to.

we have a giant of our own.
his name is diesel.
he is an engine—
a supplier and creator of power.
his jobs are many and varied,
his demands are infrequent and few.

in an emergency
he can work on almost any fuel.
on assignment
he can work almost anywhere at all.

he makes the boats go . . .
towboats on the Mississippi,
harbor boats in Pakistan,
fishing fleets out of Portugal,
tuna clippers off Peru.
in wartime he drove submarines
and landing craft.
today he helps atomic vessels
do their job.

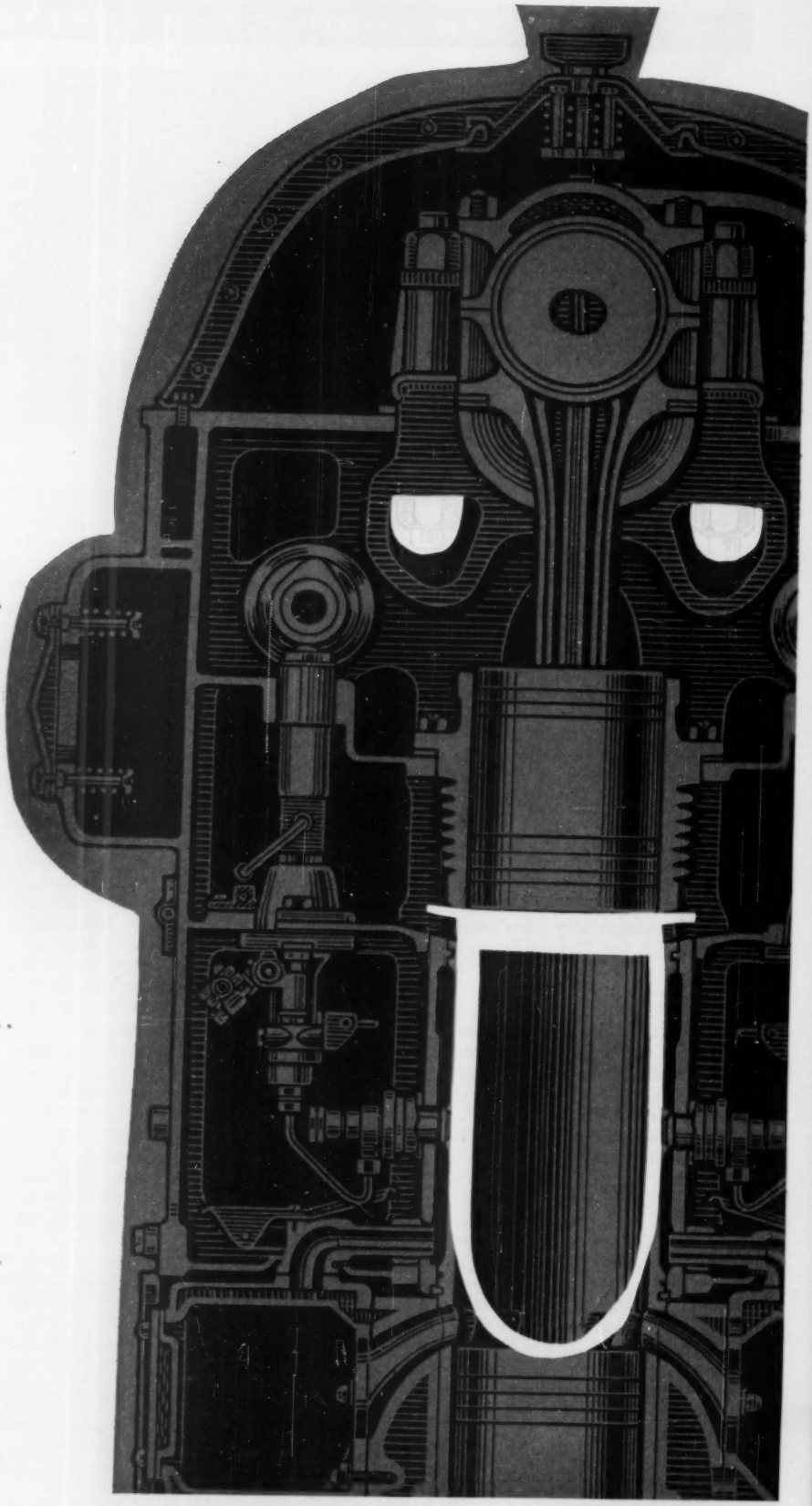
he drives . . .
cement mills in Indonesia,
dredges in Manila Bay,
oil drills in Venezuela,
rigs in the Gulf of Mexico.
he pulls buses, trucks and tractors . . .
locomotives, rock-crushers
and bulldozers.

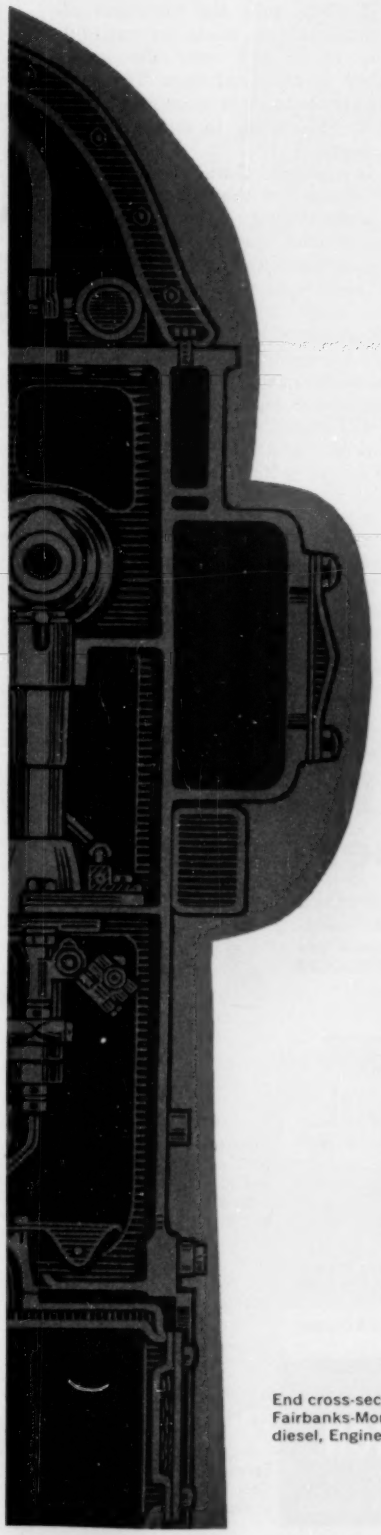
he generates . . .
light for cities
and power for plants,
electricity for homes
and more for hospitals.
he powers
missile stations in Wyoming,
radio stations in Sudan
and emergency stations in New York.

there is no country in the free world
where he is a stranger.

there is nothing he will not tackle
and little he cannot do.

his voice is in his accomplishments
and you hear it every day.





End cross-section of the
Fairbanks-Morse Opposed-Piston
diesel, Engine No. 38D8-1/8

From Beloit to Bangkok—Fairbanks-Morse diesels are known, respected and relied on. They can be tailored to available fuel. They handle heavy loads in short periods of time. And they provide low-cost electricity for almost every situation you can think of. Their minimum weight, lack of vibration and simplicity of construction are further guaranteed by our 24-hour service the world over. There is no other producer of power more universally accepted than our diesel.

If your business demands effective, dependable and economical power—you will be interested in learning more about our complete line of diesel engines.

Write to: Diesel Division, Fairbanks, Morse & Co., Beloit, Wisconsin.

Fairbanks, Morse

A MAJOR INDUSTRIAL COMPONENT OF **FAIRBANKS WHITNEY CORPORATION**

(Continued from page 5)

fast growing western suburbs; currently we carry 21,000 commuters in each direction daily, an increase of about 50 per cent since 1948.

ALLEN VAN CRANEBROCK
Burlington Lines
Chicago, Ill.

Billboards

I had an idea that THE AMERICAN CITY did not approve of billboards generally or at least had some standards about their placement.

And so I note with some surprise an article, "We Tell the Public About Our Library," by Herbert Goldhor, Chief Librarian of the Evansville Library, reporting how Evansville publicized its public library on five huge billboards around the town, (June 1959, p. 113).

The illustration accompanying the article shows a huge billboard erected at the corner of a monumental building, possibly the Evansville Library. The building is obviously an elaborate structure of classic design and this huge billboard is completely ugly and damaging to it.

The article, however, seems to be entirely in favor of the billboard and its site.

Since THE AMERICAN CITY reports on urban conditions I had thought the magazine held to some standards of urban appearance and the article surprised me by its implied approval of the board and its location.

ALBERT S. BARD, *Attorney*
New York, N. Y.

EDITOR'S NOTE: We do oppose billboards generally. But their message to encourage use of the library is in our opinion better than one urging more use of Lucky Strikes. Basically, in a democratic society of free people, the fundamental task is to encourage citizen interest in and support of local government.

Philadelphia Tries Compact Cars

The City of Brotherly Love has joined other municipalities across the nation in setting an example of easing traffic problems and lowering operating costs with the new "compact" cars.

The city has purchased 134 Ford Falcons on an experimental basis. One hundred of these will be used by the police department. The street, water, licenses and inspections, health recreation, and other departments will operate the rest.

Procurement Commissioner Michael H. Sura said the purchase of the compact cars made an outright saving of $20,367 over the same number of standard cars. The city also expects to save anywhere from $100 to $500 a car in annual gasoline costs.

Commissioner Sura stated that a year of use for the 100 police cars will show the city exactly what the compact cars can and cannot do, and how much they cost to operate. The cars will be equipped with heavy-duty generators, springs, seats, and spotlights. They will have fully automatic transmission and tubeless tires.

The police department also is getting 157 standard six-cylinder Ford patrol cars and the Fairmount Park Guards are getting 30 eight-cylinder Fords, which are needed for long, fast runs in the Park and on Roosevelt Blvd.

Fleet trade-in value was $138,702 for 321 cars, mainly two-year-old police and Park Guard cars. ◄◄

RADAX®

A TRULY NEW CONCEPT IN
PREFABRICATED
Street Sweeper Brooms

NO CORES TO BUY!

filled with long wearing water repellant SR Plastic Filament or Tynex Nylon.

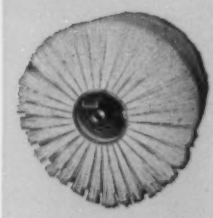
STEP UP to long-wearing, PREFABRICATED Plastic Brooms without making a capital investment. Get the lowest broom cost per mile you have ever experienced — with a NEW BROOM that really sweeps clean.

- NO CORES TO BUY
- NO CHANGES IN PRESENT EQUIPMENT
- TRUE BALANCE AND UNIFORMITY THROUGHOUT

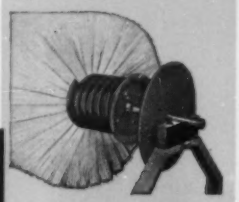
RADAX units are made on high-speed fully automatic machines. The cost factor is held down to an absolute minimum.

ONE — TWO — THREE and GO

1. Remove your stretchy broom cable.
2. Screw on the RADAX unit.
   (Visualize the RADAX Broom Coil as a big nut and your broom core as a threaded bolt. The RADAX unit screws on like putting a nut on a bolt.)
3. Anchor coil ends (we furnish anchor fixtures) and you are ready to go!



Filaments are grouped into tufts — bound in steel channel and formed into the unique continuous one-piece RADAX Coil.

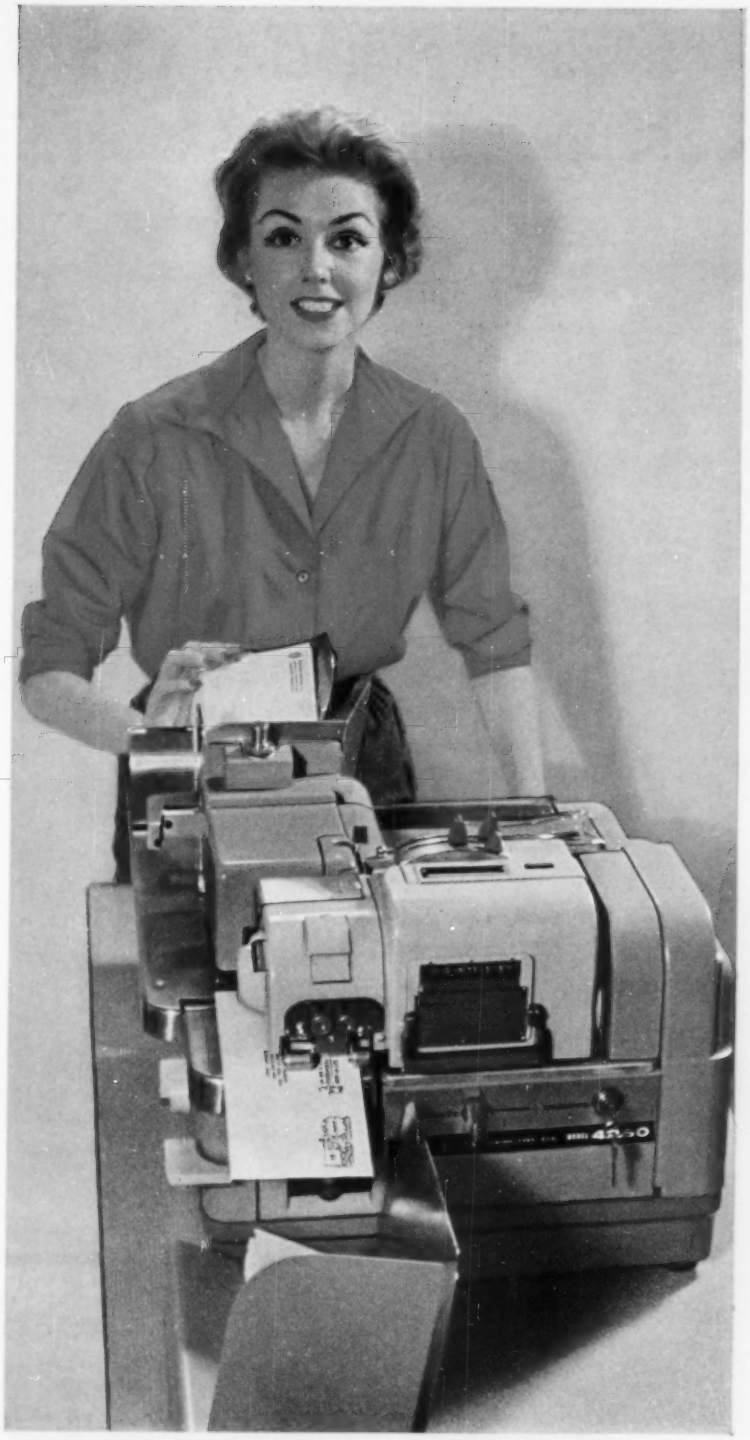


Screw the RADAX Broom Coil onto the old core — anchor — it's ready to go!

Visit us at Booth C-30
at the APWA Convention
in New York City

The RADAX Unit is disposable when worn out. Nothing to return for refilling.

RYNAL CORPORATION
DEPT. D 114 ST. JOSEPH ST.
ARCADIA, CALIFORNIA • HI 6-3600



Stamps & seals a day's mail in minutes!

Are your highly skilled and experienced office workers compelled to waste time and talents on the monotonous, tedious task of sticking stamps and envelope flaps? And required to protect and account for large amounts of fragile, and negotiable adhesive stamps or stamped envelopes? Then you need a postage meter—for its efficiency, convenience, savings in time and postage!

The meter prints postage, any value needed for any kind of mail, directly on the envelope, or on special tape for parcel post—with a dated postmark, and your own ad, if you like. All models seal as well as stamp; save time, money and postage.

Set by the postoffice for the amount of postage you want to buy, the meter always has the right stamp—protects your postage from loss, damage, misuse—and accounts for it automatically. Metered mail, already postmarked, requires less handling in the postoffice, can often catch earlier mail trains or planes.

The machine to the left stamps and seals up to 150 letters a minute. Other models, hand or electric, for every office, large or small. Some models also sign checks. Ask the nearest Pitney-Bowes office to show you. Or send coupon for free illustrated booklet.

FREE: *Handy desk or wall chart of new postal rates with parcel post map and zone finder.*

The DM, low-cost desk model, gives even the smallest office all the advantages of metered mail.

Pitney-Bowes
POSTAGE METER

Made by the leading manufacturer of mailing machines... 139 offices in U.S. and Canada. In Canada: Pitney-Bowes of Canada, Ltd., Dept. 376, 909 Yonge Street, Toronto.

PITNEY-BOWES, INC.
8576 Pacific St.,
Stamford, Conn.

Send free ☐ *booklet* ☐ *Postal Rate Chart to:*

Name _____

Address _____

"I bought another Sherman Digger because...

...since 1953, when I got my first Sherman, I have owned a total of five. The power and maneuverability of the Sherman make it easy to adjust to extreme variances in soil and terrain. The self-equalizer stabilizers also help in this respect. Then, too, the Sherman is faster than competitive makes and service and parts are always available. The jobs I have done range all the way from digging a road up the side of a mountain to digging inside San Quentin prison for an electrical contractor. We like the Sherman because we know what we are getting!"

Harold Withers, Withers & Wight Excavating, San Rafael, Calif.

Get all the low cost details from your dealer, or write Allied Equipment Department, Ford Motor Company, 2500 E. Maple Rd., Birmingham, Mich.

SHERMAN

POWER DIGGERS • LOADERS • AUXILIARY TRANSMISSIONS

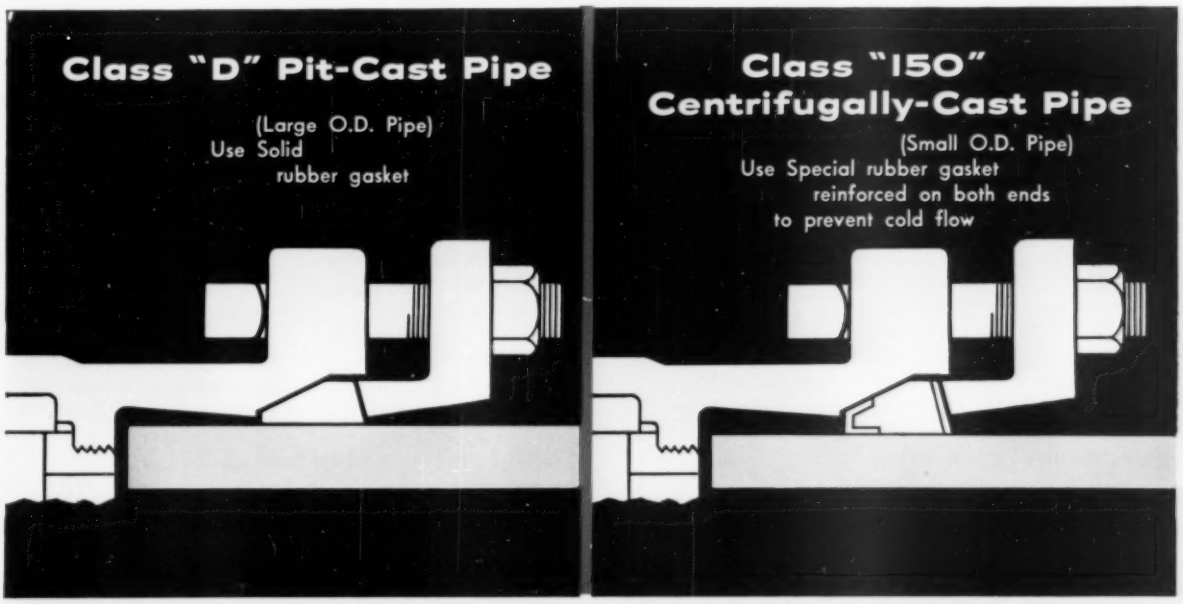
NEW! MUELLER® D-150 MECHANICAL JOINT*

. . . fits all classes of cast iron pipe regularly used!

Now, a single mechanical joint connection can be used with any class of pipe from Class "D" pit-cast pipe to Class "150" centrifugally-cast pipe just by selecting the proper gasket. Only two are needed.

These two gaskets, each accurately sized to the class of pipe, make installations faster, simpler and cheaper. The joints last longer, too, because the accurate fit prevents cold flow and future leaks.

Write for complete information and specifications.


Class "D" Pit-Cast Pipe
(Large O.D. Pipe)
Use Solid rubber gasket
Class "150" Centrifugally-Cast Pipe
(Small O.D. Pipe)
Use Special rubber gasket reinforced on both ends to prevent cold flow

* Now available on Mueller AWWA Improved Fire Hydrants and AWWA Gate Valves. Stock just one type of hydrant or valve for replacement installations in either the new or older sections of your system.

MUELLER CO. Since 1857 SERVING the Water and Gas Industries QUALITY

MUELLER CO.
DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles;
In Canada: Mueller, Limited, Sarnia, Ontario.

The homeowners campaigned for concrete!

In Indian Village, they paved 110 blocks of streets with modern concrete!

The Indian Village subdivision of Salina, Kansas, is a 5-year-old neighborhood of modest homes . . . and progressive homeowners!

Worn-out, potholed, all-but-impassable streets threatened to turn the area into a suburban slum. Neighbors got together to do something about it. They found they could have modern concrete streets, pay for them over a period of 20 years under the provisions of a new Kansas law.

Then they proved the durability of concrete to the city council, showed the monthly assessment against homeowners to be much less for concrete than for asphalt on a 20-year basis.

They got their concrete streets—110 blocks of them in the biggest street paving program ever in Kansas. And everywhere houses showed dramatic evidence of the village's new lease on life! Paint-up . . . clean-up . . . fix-up . . . villagers are taking added interest in their homes, show more pride in their attractive neighborhood.

And when the streets are paid for, they'll still be "new" — flat and smooth-riding as ever. Concrete is the one pavement that you can expect to outlast the 20-year assessment.

Thrifty concrete offers true economy for taxpayers, both today and in the future. If *you* are planning a street paving program, write for free literature — technical and nontechnical. (U.S. and Canada only.)

PORTLAND CEMENT ASSOCIATION
Dept. 8-4, 33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of concrete

MODERN Concrete

Urban Planning for Mobile Homes

The Georgia Institute of Technology and the Mobile Homes Research Foundation are jointly sponsoring a Southeastern Conference on Urban Planning for Mobile Homes.

The conference will be held in the Architecture Building at the Georgia Institute of Technology in Atlanta, October 6-7, 1960.

Georgia Institute officials point out that mobile homes are increasing at a tremendous rate in the United States and can no longer be ignored. They have provided a new way of life for a great many people.

In so doing, they have posed new problems for urban communities, including the need for additional facilities for the proper accommodation of this comparatively new type of housing. The conference plans to include such subjects as the following in the discussion:

1—Do mobile homes belong in an urban community? If so, where should they be located?

2—How should mobile homes be regulated under zoning ordinances?

3—Do mobile homes meet the residential requirements of building and housing codes?

4—What is the best way to plan for mobile homes, parks and land subdivisions?

5—Do mobile home occupants pay their fair share of taxes?

6—What kinds of people live in mobile homes? ◄◄

Police Schooling

Courses in a police training program for fall, 1960, at Western Reserve University Law-Medicine Center in Cleveland, Ohio, will include:

Criminal Law for the Law Enforcement Officer—Mondays, Oct. 3-Jan. 16, 7:30-9:30 p.m.

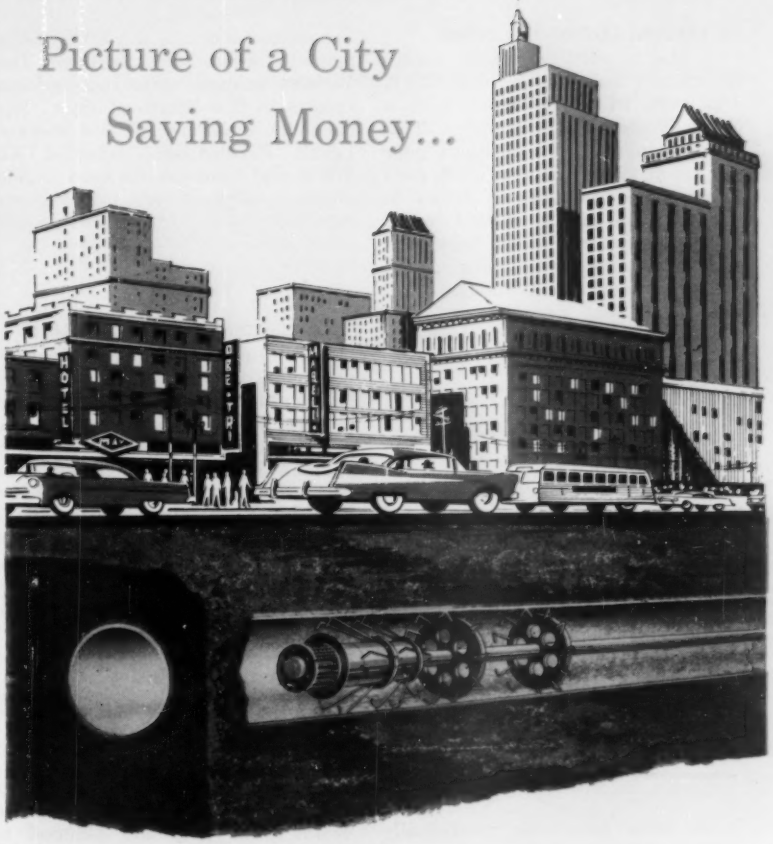
Traffic—Tuesdays, Oct. 4-Jan. 17, 6-10:15 p.m.

Police School—Wednesdays, Sept. 21-May 31, 6-10:15 p.m.

Basic Police Problems and Practices—Thursdays, Oct. 6-Jan. 26, 7:30-9:30 p.m.

The Law-Medicine Center is a cooperative activity of Western Reserve University and the Cuyahoga County Coroner's office.

Further information on these and on other courses may be obtained from Oliver C. Schroeder, Jr., director, Law-Medicine Center, Western Reserve University, 2145 Adelbert Rd., Cleveland 6, Ohio. ◄



Spunline Relines Pipe Lines in-place without removing the pipe

Another city such as Spokane, Dallas, or Los Angeles will soon be enjoying the savings of another rehabilitated pipe line. The flow will increase, the pumping cost will drop and the pipe line will be good as new for at least another quarter of a century.

And traffic will move without interruption or inconvenience to the public.

Spunline® is applicable to pipe lines down to 4″ and may be used in cast iron, steel, concrete and wrought iron pipe lines.

Write, wire or phone PIPE LININGS Inc.

Subsidiary of American Pipe and Construction Co.

2414 East 223rd Street, Wilmington, California
P.O. Box 457 • Phones: SPruce 5-3273 — TErminal 5-8201
Rail Address, Pacific Electric, Watson, California

OUR MUNICIPAL NOTEBOOK

TO PREVENT LOSING THE CURBS

. . . and to remove bumps before resurfacing a street, Oakland, Calif., first runs over the street with a Spear-Wells heater-planer. This unit "grooves" the pavement near the apron of the concrete curb, permitting the maintenance crews to resurface the street without feathering the material at the edge and running the risk of ravelling. D. M. Piburn, street maintenance engineer, feels that this treatment renews the pavement to a condition as good as when it was originally paved.

* * *

MUNICIPAL UTILITIES

. . . are increasing by default, rather than by intent. A municipal utility is a service that is financed by fees rather than by money raised through general taxes. While there

have been few new municipally owned water or electric systems in recent years, a number have established municipally owned gas systems, operated off-street parking facilities as a utility and collect and dispose of refuse and operate airports with utility financing. Several also have been forced into the public transportation business, in order to insure that the city can have this service.

* * *

SPEED UP REFUSE COLLECTION?

One good way is to install an auxiliary motor on the truck to operate the compaction and unloading equipment. In this way, your trucks can be driven while the packing cycle is operating. This is one of the features in the Santa Monica, Calif., refuse collection system that has helped to upgrade its efficiency. M. B. Gentillon, Assistant Director of Public Works, reports that the city's trucks utilize a Wisconsin V-4 air-cooled engine and a Vickers vane-type hydraulic pump. These engines have proved most reliable and economical; after five years of operation, they still require little or no maintenance. In the fifth year a major overhaul was scheduled. The Vickers pumps have required no repairs in this length of time. The collection units are 16- and 20-yard Leach Packmasters mounted on White and Ford cab-forward engine chassis. The Ford chassis are equipped with Allison automatic transmissions.

* * *

YOU SUBSIDIZE AIR CONDITIONING

. . . if your municipal ordinances permit business and commercial interests to use the large air conditioners which do not conserve and recirculate water. H. H. Gerstein, assistant chief water engineer, Chicago's Bureau of Water, places the subsidy at roughly $30 per ton of air conditioning per year, based on water rates in that city. Air conditioners using cooling towers or evaporative condensers to cool and recirculate the water used do not place undue strain on water systems and require no financial subsidy.

* * *

EXTRA DIGGING SAVED MONEY

. . . when El Centro, Calif., built its new water storage reservoirs. The basins were originally planned to be six feet deep. However, by changing the design to 16 feet, City Manager Leonard McClintock reports that the city reduced the plant site area from 40 to 18 acres, and lowered construction costs by $184,-000.

* * *

VOLUNTARY STREET PAVING

. . . has been popular in St. Cloud, Fla. In general it means complete agreement with the property owners and often payment in advance for the pavement. This generally consists of an asphaltic surfacing on a sand base. The pavement is six inches thick. Assessments run $2.00 per front foot.

If you want more information on these topics, or any other municipal problems, drop a note to:

The Editors
THE AMERICAN CITY
470 Park Avenue South
New York 16, New York

LAND REQUIREMENTS TOO LARGE

. . . for your sewage purification plant? If so, take a tip from Corpus Christi, Tex. It has replaced acres of sludge drying beds that would have been required at one of its plants, and is using instead a Standard-Hersey rotary sludge dryer.

With it, the city can reduce the moisture content from 75% to about 6%, and also can add fertilizing chemicals that make the product salable as a soil conditioner.

* * *

TO PREVENT INCINERATOR FIRES

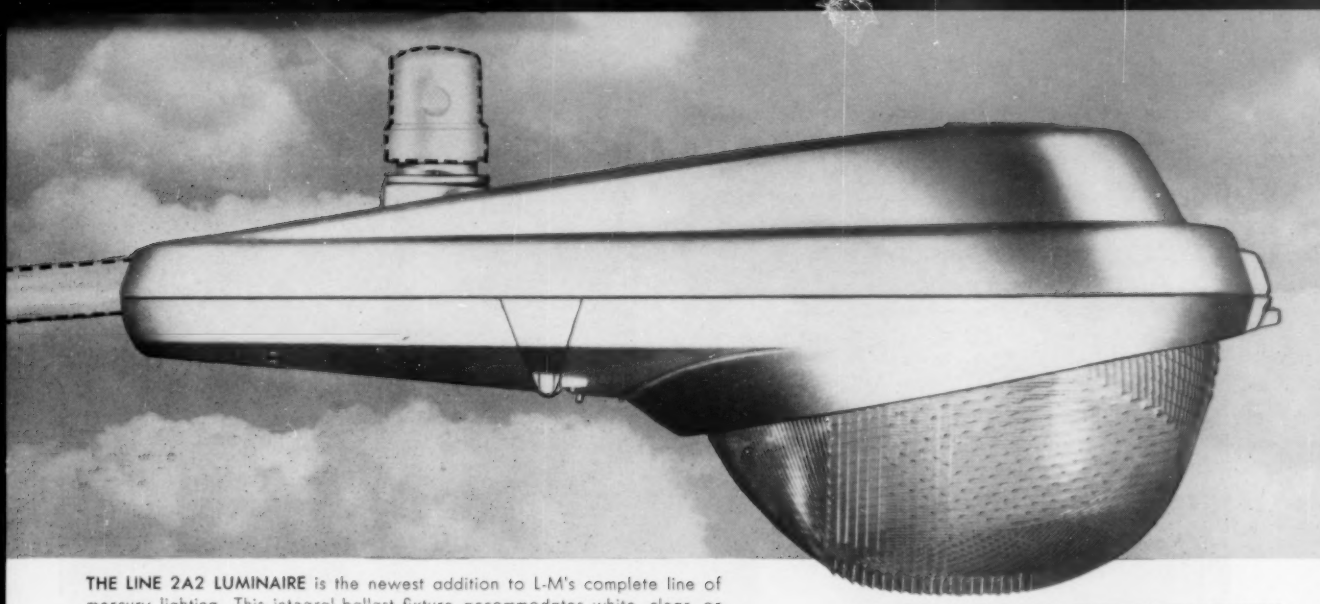
. . . in the storage pits, the Abington Township, Pa., plant uses a series of water jets above and over the front end of the pit. These can apply a curtain of wet fog over the stored refuse if a fire should break out. The installation is an Automatic Fire Jet System installed by the Central Safety Equipment Company of Philadelphia. It can operate automatically through two detectors located on the inner faces of the end-wall parapets. The plant is operated by Charles F. Hettenbach, Superintendent.

* * *

WATER SOFTENING SLUDGE

. . . is generally slippery and difficult to handle, with the consistency of soft cream cheese. Nevertheless, it still has to be picked up

and carted away, generally by costly hand labor. H. C. Hackett, water superintendent of the Williams Bay, Wisc., water treatment plant, adopted the money-saving convenience of a tractor loader to this task by using an old gravedigger's trick. A plywood "road" for his Ford tractor enables him to maneuver over the sludge beds and pick up the sludge with the tractor's front-end loader. With the plywood and tractor, he can clean a bed using two men in half the time that it used to require three men. The tractor performs so many other tasks around the water and sewage plant that Mr. Hackett finds more than pays for itself. ◄◄



THE LINE 2A2 LUMINAIRE is the newest addition to L-M's complete line of mercury lighting. This integral-ballast fixture accommodates white, clear, or color-corrected mercury lamps through 400 watts, and can be adjusted for a choice of IES Types II, III or IV light distribution, and for high or low beam. Accommodation for photo control is also available.

L-M's New Line 2A2 Mercury Luminaire Has Self-Contained Integral Ballast For Low-Cost, Efficient Installation

Line Material's new integral-ballast Line 2A2 luminaire combines high lighting efficiency and fine photometric performance with functional styling and beauty. This latest addition to the L-M family of mercury luminaires is especially suitable for lighting residential and business streets, expressways, highways, white ways and shopping centers—wherever high lighting levels are desirable.

The Line 2A2 luminaires are distinctively modern in appearance. When mounted on their sweeping support arms, these new fixtures present continuous flowing lines that grace any area where they are installed.

The cast-aluminum body encloses the ballast, condensers, support-arm clamps, terminal block, lamp socket and reflector. The refractor is hinged and swings down, providing access to the lamp and reflector. The mounting clamps and the terminal block are accessible through a removable screw plate.

Fast Installation, Flexible Applications

L-M's Line 2A2 luminaire's "all-purpose" slipfitter permits mounting on either 1¼" or 2" pipe support arms. The specially designed clamps provide large contact areas that can not damage aluminum support-arm pipes. The luminaire is completely pre-wired with all connections brought to an accessible terminal block that lies in line with the incoming conductors. All Line 2A2 luminaires can be mounted and connected in minutes.

High-Lo Beam Adjustment

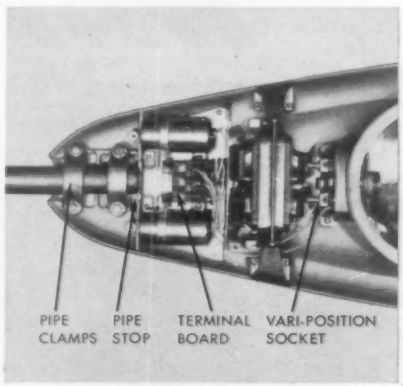
LINE 2A2 Mercury Luminaires incorporate an efficient Borosilicate Holophane refractor. The Vari-Position Socket permits a choice of IES Type II, III, or IV light distribution, and a *high or low beam* for maximum utilization. This new luminaire is available with accommodations for photo control.

The light unit is completely gasketed to seal out insects and dirt—dacron between refractor and reflector, fiberglas between lamp and socket.

Get Complete Information

Be sure you get complete information on the new L-M Line 2A2 Mercury Luminaire. Ask your L-M Lighting Engineer for Bulletin No. 59176, or write Line Material Industries, Outdoor Lighting Division, Milwaukee 1, Wisconsin. In Canada: CLM Industries, McGraw-Edison (Canada) Ltd., Toronto 13, Can.

L-M's NEW LINE 2A2 integral-ballast mercury luminaire is completely contained within a cast-aluminum body. The light assembly is gasketed to seal out insects and dirt; the refractor is hinged for easy access.



L-M's NEW LINE 2A2 luminaire is completely self-contained and pre-wired for quick, money-saving installation. All-purpose slipfitter accommodates 1¼" and 2" pipe support arms.

LINE MATERIAL Industries Outdoor Lighting

McGRAW-EDISON COMPANY

DISTRIBUTION TRANSFORMERS • RECLOSERS AND OIL SWITCHES • FUSE CUTOUTS AND FUSE LINKS • LIGHTNING ARRESTERS
POWER SWITCHING EQUIPMENT • PACKAGED SUBSTATIONS • CAPACITORS • REGULATORS • OUTDOOR LIGHTING
LINE CONSTRUCTION MATERIALS • PORCELAIN INSULATORS • FIBRE PIPE AND CONDUIT

McGRAW EDISON

NOW YOUR STREETS CAN BE WAYNE-CLEAN

...with the exclusive Wayne Rental Plan

Now you can *rent* the Wayne Street Sweeper of your choice, pay the rental with operating funds... and actually *own* your Wayne at the end of the rental period for just $1.00! *There's no need to seek special appropriation, no capital investment required!*

This Wayne Rental Plan—for any city of any size—is the simple and convenient method of starting your own street sanitation program. You can save enough on labor alone to pay the nominal rental... your city's streets are kept sparkling clean... and you have years of additional service from your rugged, dependable Wayne.

Before you invest in any sweeper equipment or program, check with Wayne. Send for the brochure outlining the exclusive Wayne Rental Plan for municipalities. It's yours for the asking... ***WRITE TODAY!***

WAYNE Manufacturing Co.
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Send me details on the Wayne Rental Plan

Name _____
Title _____
Street _____
City _____ Zone ___ State ___

WAYNE MANUFACTURING CO.

THE WORLD'S LEADING MANUFACTURER OF
POWER SWEEPERS FOR CITIES AND INDUSTRY

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CHICAGO, ILLINOIS
NEWARK, NEW JERSEY

Export: Henry R. Jahn & Sons, Inc., New York City

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SIDEWALKS

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Look at the Ways Wayne Can work for your City!

Dirt and dust don't stop at the curb—they can mar the good looks of your city in a dozen public places!

But wherever debris accumulates, there's a Wayne Power Sweeper with the right capacity, designed and engineered to dig it out *fast*—to do the most economical and efficient sweeping job your city can enjoy.

Find out how you can save manpower...save time...and get municipal housekeeping done *better*, for less. *Write for the Wayne Power Sweeper Brochure—yours for the asking!*

WAYNE MANUFACTURING CO.

2436 E. LEXINGTON ST., POMONA, CALIF.

POMONA • CHICAGO • NEWARK

Plastic Sewer Pipe Solves a Problem

Installation of a flexible eight-inch diameter sewer line appears to have solved one of our most perplexing problems. In one section of the city, the earth heaves and moves to disrupt sanitary sewer lines in the vicinity. Repeated excavations revealed that the pipe had been displaced or pushed by as much as one diameter. This usually meant stoppage of flow, overflowing manholes and sewage flowing down the road gutters of a cemetery adjacent to the site.

Last year, in an effort to rectify this condition, we decided to try Evanite plastic sewer pipe, made by the Evanite Plastic Co.

Because of the wet, gummy and unstable soil, the trench had to be dug wider than normal. It varied from five to eight feet at the top. Pipe bedding consisted of six inches of chips left over from a rock crushing project (ranging from chat down to sand) to absorb some of the earth movement.

We then lowered 30-foot lengths of eight-inch Evanite pipe and solvent-welded them together in the ditch. We experienced no difficulty making the joints, even though there was some water in the ditch. We did, however, experience some difficulty maintaining exact grade, for it was necessary to block up one end of the pipe so it was out of water while making the joint.

Backfill was placed around the pipe and to a depth of about 18 inches above the pipe and air tamped. Bad weather prevented backfilling the remaining four to six feet for about three weeks. This was done mechanically.

After about five months we decided to check the line first by passing an eight-inch Sidu ball through it and then a 7½-inch Flexible auger. This we did with no difficulty showing that the pipe was not deformed or broken.

In about another year we plan to make a similar test, and at that time should know whether our problem has been solved or not. At present all indications are that the plastic line has done the job.

T. W. Clapham, *Manager*
Little Rock Sanitary Sewer System
Little Rock, Arkansas

Workmen install 30-foot lengths of eight-inch plastic pipe to replace a sewer line which was constantly being disrupted by heaving soil.

OCT. 20, 1952: 4″ SNOW—WILKES-BARRE-SCRANTON, PENN.
OCT. 10, 1954: 6″ SNOW AND SLEET—CLEVELAND, OHIO
OCT. 25, 1955: FREEZING RAIN—CHICAGO AND DETROIT
OCT. 24, 1956: 3″ SNOW, FREEZING RAIN—SOUTH DAKOTA
OCT. 18, 1959: 3″ SNOW—NORTHERN NEW ENGLAND

(Source: U. S. Weather Bureau Climatological Data)

1960?

Prepare for early storms—order STERLING ROCK SALT now

If you're caught without rock salt, early storms can paralyze traffic, cause serious accidents, mean heavy business losses. Don't let this happen to you! Stockpile your Sterling Rock Salt now and stockpile enough. (When treated with Storite, Sterling Rock Salt can be kept from caking even in outside storage.) Order *now* from your nearest International Salt Company sales office.

INTERNATIONAL STERLING SALT SALT COMPANY
"A STEP AHEAD IN SALT TECHNOLOGY"
BUFFALO • BOSTON • CHARLOTTE • CHICAGO • CINCINNATI • DETROIT • NEWARK • NEW ORLEANS • NEW YORK
PHILADELPHIA • PITTSBURGH • ST. LOUIS • HEADQUARTERS, CLARKS SUMMIT, PENNSYLVANIA

Farm Tool Clears Snow

Although not intended for snow removal work, this New Holland Machine Company Crop-Chopper 33 did a good job during one of last winter's big storms. The picture shows the unit being towed by a tractor, clearing snow from a road near Stone Ridge, N. Y. Its churning knives chewed up the snow which was then blown away through the discharge spout. ◄◄

Salt for Safety in Saginaw

Since 1954, the City of Saginaw, Mich., has received a National Safety Council Award for its achievements in traffic safety. The judicious use of rock salt has played its part in this achievement. During icing conditions, salt is spread to reduce road hazards.

Saginaw is located in the center of Michigan's lower peninsula in the lower reaches of the Saginaw valley. Although Saginaw does not normally have heavy snow storms, it has numerous light snowfalls. It is common to go through a winter and plow the streets less than a half dozen times. However, a salt truck rumbling down the city's streets is a very common sight. With the valley's high incidence of freezing and thawing (about 140 cycles per year) and the numerous light snowfalls, rock salt has helped solve the problem of icy streets and aided driving safety.

Of Saginaw's 306 miles of streets, 102 miles are major streets and state trunklines. When icing conditions threaten, the salting crews are alerted. As snow begins to fall or ice begins to form, they go into action. State trunklines and heavily traveled streets get the first treatment. All major streets are salted. On residential streets, only stop and dangerous intersection approaches get the treatment.

Saginaw receives the salt supply by lake freighters, as it is a Great Lakes port. The annual use of salt is over 3,000 tons.

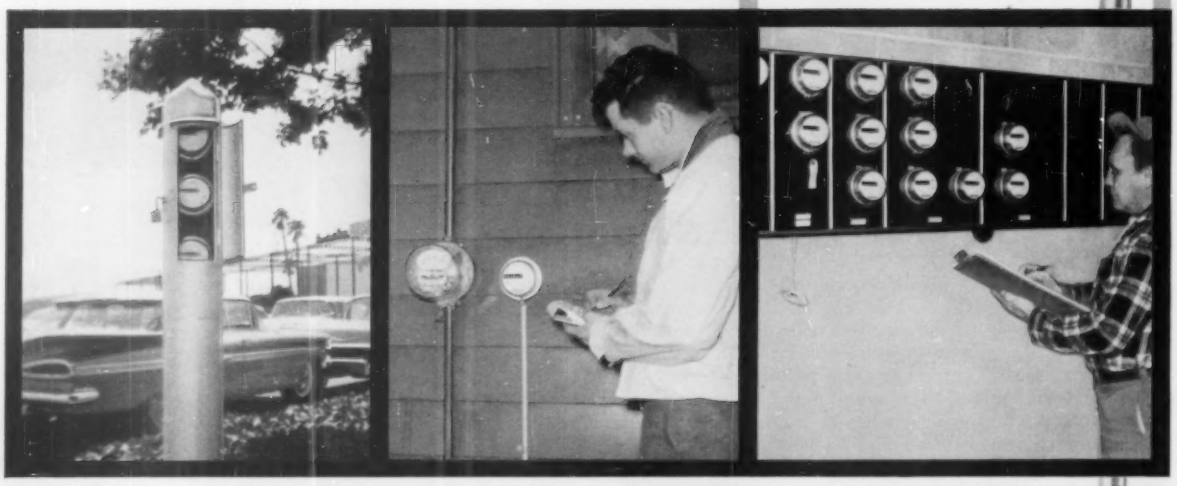
Salting equipment consists of ten units: six Century spreaders; two Swenson units which have been changed from mechanical to hydraulic operation; and two Young "V" bottom semi-trailer units used on trunk lines and major streets (the Young units can be used to spread gravel on unimproved streets during the summer). The Swenson spreaders attach to dump trucks having four- to five-yard capacity. The Young units have ten-yard capacity and interchangeable facilities for salt and gravel. All units place salt over an eight-foot-wide spread. We vary the application with the temperature. The average application is from 500 to 2,000 pounds per mile.

The use of rock salt in streets in Saginaw has solved a real problem of ice control and made the city a safer place to drive during winter months.

C. A. MILLER
City Manager

Plenty of salt means practically no plows in Saginaw's snow program.

Badger *Read-o-Matic's** cost-cutting story is big as all outdoors



*Pat. applied for in U.S.A. and foreign countries.

All over the country water departments are cutting meter-reading costs and increasing efficiency with Badger Read-o-Matic outdoor meter-registers.

Accessibility is the big advantage of this self-contained register. Read-o-Matics are installed *outside*, often in convenient "reading stations" which a meterman can read quickly and easily. This system is safer, too, because it completely eliminates the dangers involved in climbing down into underground vaults and other inconvenient locations.

Install this faster, lower-cost reading system in your water department. Write for literature or call your Badger representative for a demonstration.

Badger Meter Mfg. Co.

4545 W. Brown Deer Rd.
Milwaukee 23, Wisconsin

12-60

Los Angeles' Latest Anti-Litter Idea

This year the Los Angeles City Department of Parks and Recreation gave Parky the Tidy Kangaroo three dimensions in the form of an eight-foot-high replica made of color-impregnated fiber glass. His pouch contains a 30-gallon removable trash barrel. Park officials, pointing out that Parky anti-litter poster campaigns have reduced clean-up time in city park areas as much as 70%, expect the new receptacle to cut costs even more. As Orin Wennersten, maintenance superintendent of the department, puts it: "With this imposing replica of Parky overseeing our parks, roadside picnic areas and beaches, most people will think twice before throwing candy wrappers, cans or picnic leavings on the ground."

The Parky symbol, inspired by Smoky the Bear, the fire prevention symbol, originated in a contest sponsored by the maintenance division of the Los Angeles City Department of Recreation and Parks in 1952. The idea kept growing and to date has spearheaded "Help Keep Roadsides, Parks and Beaches Clean" campaigns in more than 300 major American cities in the past four years. ◄◄

Parky the Tidy Kangaroo with its 30-gallon trash container will help to keep Los Angeles parks, roadside picnic areas and beaches litter-free.

Composting Here and Abroad

While composting of garbage is rapidly increasing abroad, there is little change in the composting picture in the United States. So states the introduction to Supplement 2, Composting of Organic Wastes—An Annotated Bibliography published by the U. S. Department of Health, Education and Welfare, Public Health Service.

The Naturizer Company of Norman, Okla., has in operation a 40-ton-per-day plant and the City of Williamston, Mich., operates a small plant that handles both garbage and sewage sludge. The latter plant appears to be the only municipally operated installation in this country. The Dano plant in Sacramento County, operating since October 1956, plans to enlarge capacity from 50 to 100 tons per day. The advent of the sludge-dehydrating centrifuge and vibrating sieve and their low operational costs should have some effect on the use of refuse-sludge composting in the United States. There appears to be no change in compost utilization, although in addition to agronomic uses it would appear that the deep litter method of poultry raising might provide an additional limited market.

Numerous articles, largely foreign, have appeared on this subject in the short interval since the bibliography, for there is still more activity in both research and in plant installations in Europe than in America.

Abroad there are about 32 Dano biostabilizer plants built or under construction, 12 rasping-system (with windrow composting) plants, and a number of enclosed plants, employing intermittent disturbance. The van Maanen system seems to be on the way out and many of the Earp-Thomas plants have been discontinued. A large plant employing the Jersey system was recently completed in Bangkok. Other large plants are reportedly under construction at Tel Aviv, Israel; Brussels, Belgium; Arnhem, the Netherlands; and Stuttgart, Germany. Emphasis in Europe is now being placed on the joint treatment of refuse and sewage sludge or night soil. ◄◄

Phoenix Looks Into Composting

Phoenix, Ariz., has had four offers to compost its municipal refuse and transform it into a fertilizer. After a nationwide search the city received proposals from the Dano, Earp-Thomas, Naturizer, and Orcoa processes.

Following a series of meetings with each of the proposers and further study of the proposals, the Council selected the Dano process, and negotiations on final details of an agreement are now in process.

Composting, although extensively used as a means of refuse disposal in Europe, Asia, and the Middle East, has not progressed beyond experimental or "pilot" operations in this country. Interest on the part of Phoenix came as the result of such a "pilot" operation being conducted by the U. S. Public Health Service near Chandler, Ariz. The city's invitation for proposals was an effort to determine whether private enterprise was interested in putting venture capital into a composting operation in Phoenix. ◄

132 Different Diameter-

the right one can save you

Thickness Combinations...

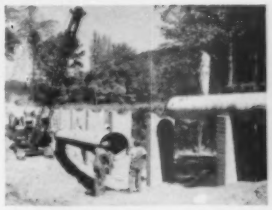
money when you need water pipe

Between the range of diameters from 6″ to 36″, Armco Welded Steel Pipe is available in 132 different diameter-wall thickness combinations. This unparalleled range of sizes means you can specify the pipe that meets your requirements EXACTLY. No need to settle for the "next heaviest wall" and all the extra cost of extra material.

Is the extra weight a significant amount? Consider this example: In one mile of 14″ OD pipe, the weight difference between .172″ wall thickness and .188″ wall thickness is *six tons!* In larger pipe, the weight difference is even greater.

Arrange now to discuss your Welded Pipe requirements with your nearby Armco man. Armco Pipe is made to meet the applicable Standards of AWWA and Underwriters' Laboratories, Inc., and ASTM Specifications. Use the coupon to tell us your needs. No obligation! Armco Drainage & Metal Products, Inc., 5000 Curtis Street, Middletown, Ohio.

New steels are born at Armco



ARMCO DRAINAGE & METAL PRODUCTS, INC.
Department A
5000 Curtis Street, Middletown, Ohio

Please have the Armco sales engineer in my area make an appointment to discuss Armco Welded Steel Pipe for the following applications:

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ARMCO DRAINAGE & METAL PRODUCTS

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company • The Armco International Corporation • Union Wire Rope Corporation

▲ **When the bell hits, they roll—every time!** The men of Brighton Fire District #5 protect both residential and high value industrial areas of Town of Tonawanda, N. Y. Here they swing into action with their newest Mack fire fighting equipment . . . a 1000-gallon C Model pumper of the latest cab-forward canopy-cab design and a B Model aerial.

◀ **Thirty years young . . . and still going strong.** Purchased in 1930, this 1000-gallon Mack pumper was the first in a long, continuous line of dependable Mack fire apparatus at Town of Tonawanda.

30 YEARS of the finest fire protection—backed by Macks

A spanking new 1000-gallon Mack pumper was the first piece of Mack fire apparatus purchased by Brighton Fire District #5, Town of Tonawanda, N. Y. The year—1930. As fire protection needs grew, Mack after Mack joined the ranks of this growing fire fighting organization. The recent addition of still another 1000-gallon Mack pumper rounds out a full thirty years of all-Mack-equipped fire protection, with a total to date of five pumpers and one aerial, and an enviable record for dependable fire fighting service to the rapidly expanding residential community and its industrial neighbors.

From the finest line of exclusive fire apparatus components in the industry, Mack can custom-build the exact apparatus you require; conventional or cab-forward design; with the transmissions and gear ratios exactly matched to your terrain; with generous locker space; and with the extras needed to cope with any fire fighting problem.

When increasing fire protection needs of your area call for better-built, better-designed apparatus, call on Mack. Find out why Mack apparatus is known everywhere as the best-performing, most dependable equipment in the world today. Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ontario.

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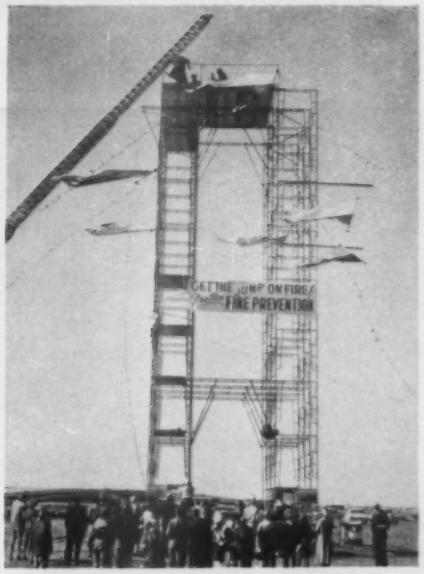
FIRST NAME FOR

FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 to 1250 GPM...SQUAD AND HOSE WAGONS...AERIALS 65' to 146'...COMBINATION LADDER TRUCKS

Portable Drill Tower



The portable 52-foot drill tower of the Dallas Fire Department was erected at the Texas State Fair to demonstrate fire fighting and rescue work. The drill tower is a regular product of Safway Steel Products, Inc., Milwaukee 13, Wis., manufacturers of Safway tubular steel scaffolding.

Berkeley's Two-Way Radio Serves Fire and Police

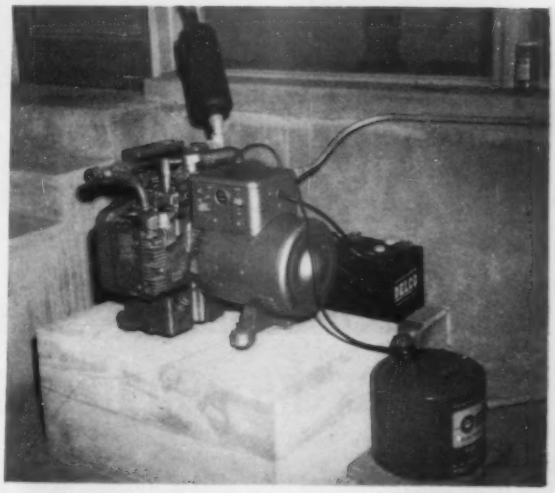
Berkeley, Mo., has brought its fire and police communication system up to date. Incidentally, Berkeley, a city of some 18,000, has "integrated" its fire and police radio and it's working well. When the fire department is alerted for a call, the police department is on hand to direct traffic. Berkeley has acquired three Motorola walkie-talkies for use by the police department when they wish to employ unmarked cars, and by the fire department when the officer in charge must leave the immediate area or enters a building. The Civil Defense unit has employed the sets for MOCK disaster conditions and in traffic direction exercises.

The dispatching of fire and police in Berkeley is handled by the police department. At the dispatching point a D. W. Onan emergency stand-by generator is maintained. Sufficient current is generated to operate the base station, provide lights and furnish power to pump gas.

A peculiarity of the metropolitan area around St. Louis is a point-to-point radio system. Most of the large suburban communities have a receiver and transmitter on this frequency. In addition to the cities, St. Louis County Police, Missouri State Police and Illinois State Police are also on the channel. This provides easy and quick contacts with other departments in emergencies as well as normal police communications.

Berkeley has received many commendations from citizens on the promptness with which calls for assistance are answered.

GORDON E. OLSON
City Manager



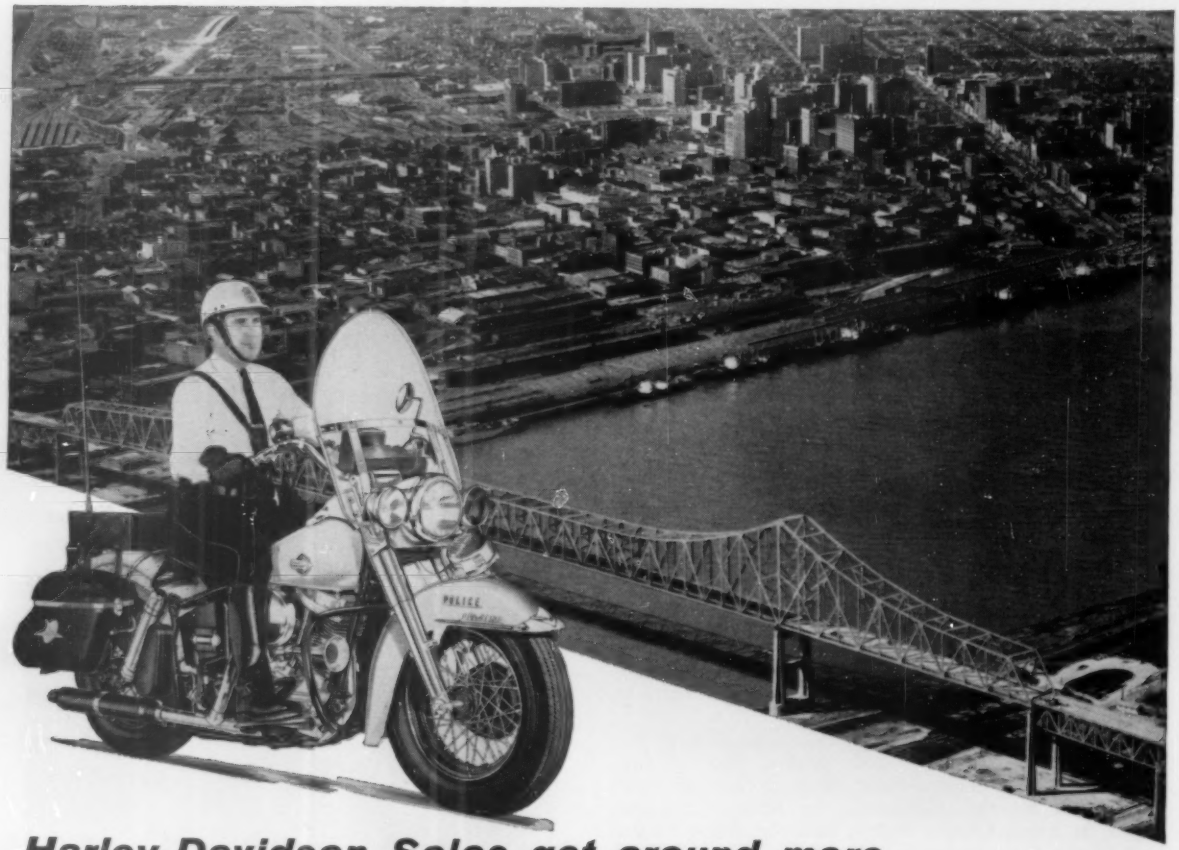
Berkeley's stand-by generator goes on when power fails.

Fairmont's Fire Pumper

A 1,000-gpm triple-combination fire pumping engine for Fairmont, Minn., features an electric rewind hose reel, a 500-gallon water booster tank, and a five-man forward-mount canopy cab. It was built by FWD Corp., Clintonville, Wis. ◄

Stretching the long arm of the law in New Orleans

NEW ORLEANS, LA. — Here's a city that's growing by leaps and bounds. In fact, by total area (363.5 square miles) it's the nation's third largest. A fleet of 49 Harley-Davidson Solos range far and wide keeping law and order in this sprawling metropolis.



Harley-Davidson Solos get around more

...bridge the gap between you and trouble

Solo-mounted officers really do get around . . . around all obstacles. Nothing stops these mobile vehicles from getting through to the spot where they're needed — always poised to strike swiftly whether in crowded traffic or on busy expressways and fast-moving highways.

And no other police vehicle is more versatile. Use Solos on traffic control, criminal apprehension, residential and school patrol, daily emergencies, calamities, special duty, parade and escort duty. With communities *spreading out* and at the same time *spreading thin* your personnel, it is this flexibility that allows you to get the most out of your equipment dollars.

The Solo for 1960 is better than ever. Mobile radio-phone, speedometer clock control, siren and pursuit lights are improved features — add teeth to law enforcement. Call your Harley-Davidson dealer. Or write Harley-Davidson Motor Co., Milwaukee 1, Wisconsin for informative new brochure, "Intensive, Effective, Impressive Police Mobility."

HARLEY-DAVIDSON

Police Motorcycles

Flight to the Suburbs Slows Down

If New York City is an indication, apparently the urban dwellers are taking a second look at suburban living. In a recent Newsletter, the Department of City Planning for New York City published statistical data which would indicate that people are moving from the suburbs to the city.

Applications made to two large new upper-income housing units show that 7.7% of those applying for housing are from areas surrounding metropolitan New York. While this alone is not a sensitive index, another source of data is the record of admissions and discharges of pupils to and from areas adjacent to New York City. These figures indicate these recent trends:

1. The number of families with children enrolled in public schools moving from New York City to the suburbs has declined substantially after a sharp increase in the first half of the last decade (51 to 55).

2. During the past seven years, the number of families with school-age children moving to New York City from the suburbs and enrolling in public schools increased slightly.

3. The net out-migration of families with children enrolled in public schools, which had increased substantially between 1951 and 1955, has decreased significantly.

Admissions from suburban areas surrounding New York City increased 23% in the past seven years according to the letter. Discharges rose substantially from 1952-3 to 1955-6, but decreased 27% from the latter period to the 1958-59 school year. ◄◄

Former City Manager Named Director of 'Citizens-for-Michigan'

Donald Oakes has been named executive director of "Citizens-for-Michigan." In addition he has a consulting practice in public management in Grand Rapids. Mr. Oakes has been manager of Grand Rapids, Berkley, and Alpena, Mich.

"Citizens-for-Michigan" is a non-profit, fact-finding organization that was created during the recent financial crisis of the state and is dedicated to improving the economic, social, and cultural climate of the state. It encourages active participation in local and state governmental affairs. ◄◄

Air Pollution Control Notes

Supreme Court Action

Two recent actions of the United States Supreme Court are of importance to air pollution control. In one, the Court upheld a Detroit anti-smoke ordinance. In a 7-2 decision, the Court held that the law can be applied to merchant ships having Coast Guard licenses and engaging in interstate commerce. In the other, the Court agreed to review a Federal Court of Appeals decision, reversing the Federal Lower Commission and permitting the use of natural gas to fire the boilers of Consolidated Edison's power plant near the United Nations building in Manhattan. New York City is supporting the company's request for the gas, as an aid to air-pollution reduction. The argument will be held at the Supreme Court term beginning in October. No decision is likely before winter.

Air Pollution and Cancer

A study, made by the United States Public Health Service, shows that a possible cancer-producing agent, which is also found in cigarette tars, is universally present in the air of American cities. The year-long survey revealed that benzpyrene is found in the air of Atlanta, Birmingham, Cincinnati, Detroit, Los Angeles, Nashville, New Orleans, Philadelphia and San Francisco. Another study covers 94 urban and 28 non-urban areas. The report stated that a non-smoker, living in an American city, is exposed to more benzpyrene than a person in a non-urban area who smokes a pack of cigarettes a day.

Bay Area Regulation Effected

Regulation 2 of the Bay Area (San Francisco) Air Pollution Control District went into effect on July 1st. The Regulation sets forth the limits and standards for the control of air contaminants from industrial, institutional and commercial operations. All affected industries and other operations must be registered with the District by September 1st. By January 1, 1961, all affected operations must comply with the regulation. If there is a complex problem, a compliance schedule must be submitted by October 1, 1960.

APCA Elects New President

Harry A. Belyea, chief air pollution control officer of the Municipality of Metropolitan Toronto, Canada, is the new president of the Air Pollution Control Association, succeeding Dr. Leonard Greenburg, Professor and Acting Chairman of the Department of Preventive Medicine at the Albert Einstein College of Medicine, New York City. Mr. Belyea was elected at the 53rd annual meeting of the APCA, which was held in Cincinnati.

Courses on Air Pollution

Beginning September 19th and through next May 26th, 12 courses on various aspects of air pollution will be given by the United States Public Health Service at the Robert A. Taft Sanitary Engineering Center. Details may be obtained by writing to the Center, 4676 Columbia Parkway, Cincinnati 26, Ohio.

In Michigan

Air pollution in some parts of Michigan poses a serious problem, according to a recent statement by John C. Soet, Occupational Health Director of the State Health Department. Mr. Soet said the problem is critical "in spots" in the following areas: Port Huron, Alpena, Manistee, Marquette, Muskegon, Kalamazoo, Lansing, Grand Rapids, Detroit and the down-river area of Wayne County.

—Prepared by Kenneth Kowald

at Booth B31-35 during the
APWA show in New York to see the...

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HYD-PAK®

packer bodies and trailers. They're

in refuse collection equipment!

Hobbs Hyd-Pak is a division of HOBBS TRAILERS • 609 North Main • Fort Worth, Texas • Cable HOBBSCO

O-G-8

One Broom Per Season

This plastic-fiber broom showed only one inch of wear after three weeks of 16-hour-per-day service. The sweeper is an Austin-Western used in Arlington, Mass.

Polypropylene broom bristles are the latest big advance in mechanical-sweeper broom design. They provide a broom which sweeps cleaner and lasts many times longer than natural fiber.

These new bristles, called Prostran, have overcome most of the shortcomings of the previous synthetics employed in mechanical sweeper brooms. They consistently deliver performance records of 2,000 to 3,000 curb miles swept per single broom. With these fibers, a sweeper may operate for an entire season with one broom.

But most important, the Prostran broom makes a clean sweep on the first pass. Even during spring clean-ups, when heavy debris has accumulated, streets are swept clean the first trip.

The broom does an exceptional job at all types of sweeping. At "fine" sweeping it outperforms all other types; when used in heavy-duty sweeping it easily picks up debris even as large as cobblestones. Prostran bristle filaments have a strong bend-recovery characteristic, wear evenly, and provide ideal sweeping action. The broom is fuller and stiffer than brooms made with either natural fibers or other synthetics; it has more body and better appearance. The abrasive action of the broom is excellent.

The choice of bristle materials for mechanical sweeper brooms is now broad, with a number of natural fibers, a select group of synthetics, and wire all in considerable use.

Natural fiber brooms are still supplied as standard equipment by manufacturers of new equipment. As a result, the purchaser, no matter how limited his sweeping requirements, must plan at the outset to replace his original broom. This will require the purchase of additional equipment and the allocation of suitable manpower if he wishes to do the work himself, or the location of a reliable commercial source of bristle replacement.

The Prostran bristle is undoubtedly part of an important trend in the development of new synthetics which are highly durable, though low in cost. Their immediate success in mechanical sweeper brooms parallels the wide popularity and increasing demand for other types of products made with the same new material, polypropylene. The synthetic resin, called Pro-fax, was introduced on the American market a little over two years ago by Hercules Powder Company and is already in widespread use in other filament forms, including rope and auto seat-cover fabrics.

JOHN E. KLIPHOUSE
Sales Manager
E.B. & A.C. Whiting Co.
Burlington, Vt.

Cleaner Streets This Year In Decatur

Although there were 10 inches of snow on the ground when this picture was taken, city officials of Decatur, Ill., were giving thought to the year-round job of street cleaning. The delivery of this heavy-duty Wayne machine brings the city's sweeper fleet to three. Special features of this new unit include power brakes and power steering. Checking over the new sweeper are Everett Shrieves, mechanic (in cab) and Cecil Aldridge, foreman. ◄◄

New TV Camera Detects Sewer Leaks

By **JOSEPH W. WATSON**, City Manager

Hollywood has a new television detective program, "On the Trail of the Leaking Sewer," that will be shown only to a select audience and won't care a snap about Hooper ratings.

This program originates in Hollywood, *Florida*, not California. A recently developed, miniaturized television camera is being used extensively to pinpoint leaks in sewer lines, making it possible to observe the application of corrective measures. The camera is completely water-proof and has a non-fogging lens and its own cold-light source.

The camera, small enough to be used in lines as little as six inches in diameter, is pulled by a 500-foot control cable through a leaking section of sewer, transmitting to a high-fidelity monitor the complete inside picture of the line. An inspector in a truck control room watches this television performance, notes sources of infiltration and pinpoints the distance from the manhole.

Repair crews, by either external grouting through a pipe jetted to the sewer line or internal application of a chemical seal, force-sprayed and wiped on the inside of the line, correct the leak without excavation to the trunk or lateral. The whole operation and the final sealing of the leak is constantly visible on the inspector's television screen. The technique of finding and sealing the leaks was developed by National Sewer Services, Inc., Niles, Mich. The sealing compound is AM-9 chemical grout produced by the American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y.

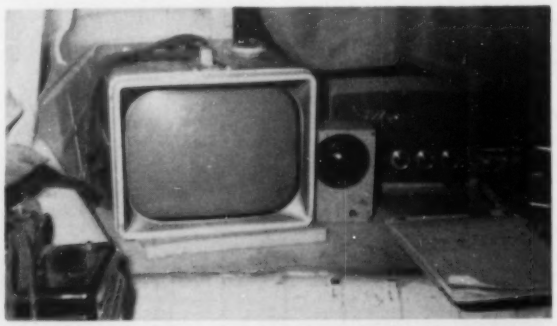
Substantial Savings

The City of Hollywood has enjoyed substantial savings by this equipment and method of repair. One entire section of leaky sewer trunk, which would have required at least $250,000 to replace conventionally, was repaired at a cost of $9,000 on the basis of $78 per leak. The work was completed at depths of as much as 14 feet, far below the mean level of the water table, which in Hollywood, even in dry weather, is within 3½ feet of the surface. Together with leaking joints, the high water table has caused up to 300% overload of the sewage treatment facilities, and is bringing about a situation that is becoming more troublesome in many seacoast municipalities.

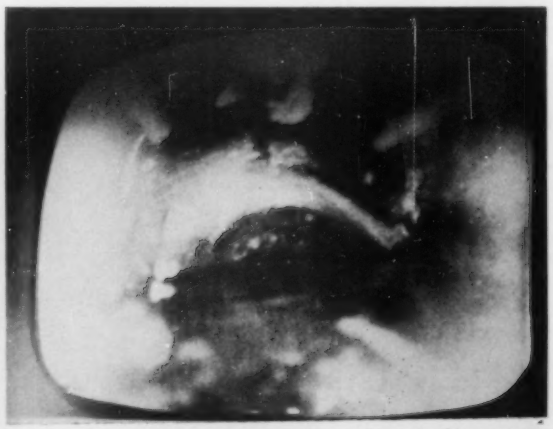
This method of repair had its inception three years ago in Hollywood, starting with employee-improvised still cameras complete with remote-controlled flash attachments and automatic control for sequence exposures. Once its feasibility was proved, the city worked closely with commercial developers, providing specifications for closed circuit television.

This particular camera is supplied by Eyetronics, Inc., 3150 NW 7th Ave., Miami, Fla. It is an all-transistor unit in a stainless steel cylindrical casing, 18 inches long and 5 inches in diameter. The unit is being assembled and marketed by one of the largest American radio and television manufacturers.

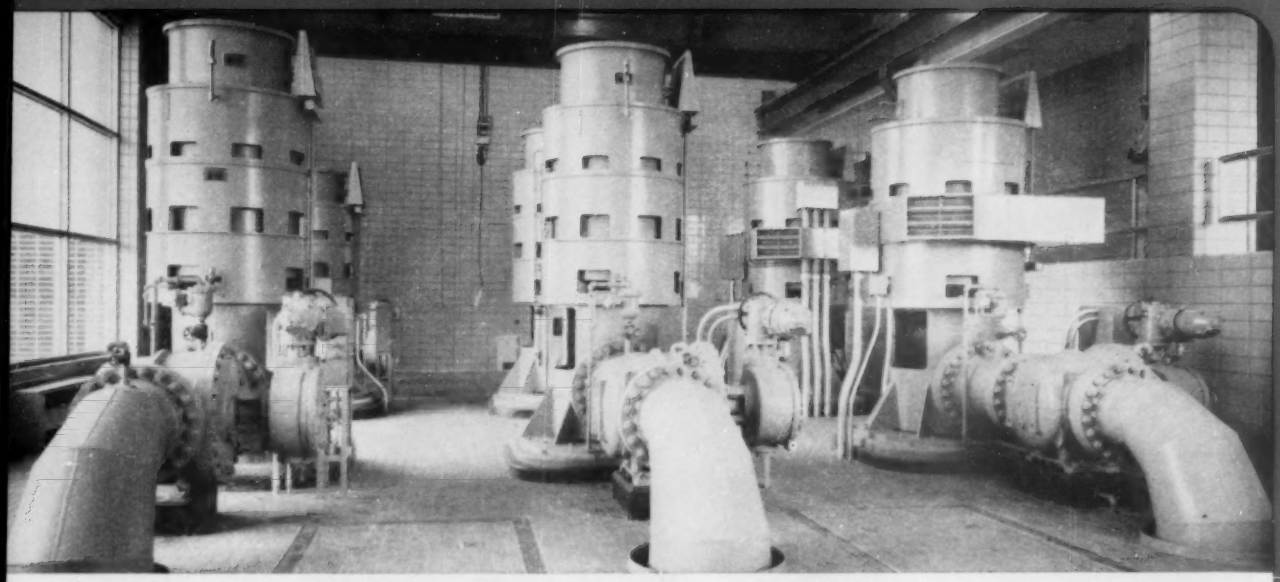
The TV camera gets ready to record the Hollywood "underground." The camera has been inserted through the manhole into the sewer.



This television set carries a special program, "The Case of the Broken Sewer."



Found—one leaking sewer.



PLENTY OF WATER for Springfield-66 MILLION GPD Max.

Springfield, Ohio has a completely new, automatic water supply system by Layne. It guarantees 66 million gallons per day for their present and future needs—a job complete by Layne—and a completely satisfied customer. Field Tests exceeded the guaranteed pump efficiencies by 1% to 2% on all units. Consulting Engineers: Black and Veatch, Kansas City Missouri. Water Supply Contractors: The Layne Ohio Company, Columbus, Ohio. Do you need complete water service? Get it from Layne. Write for Bulletin 100.

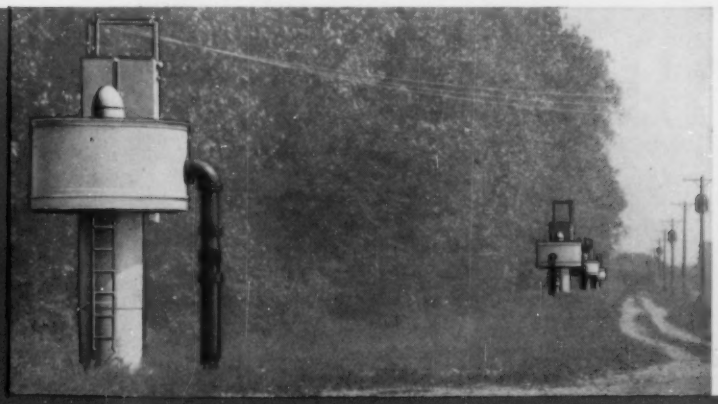
Specifications

RAW WATER—10 Layne Gravel Wall Wells with Layne 18-8 Stainless Steel shutter screen and 10 Layne deep well pumps. 2800 GPM — 65 ft. TDH, 75 hp—440 Volts— 1750 RPM, located in two banks pumping to the filter beds. Pumps were installed 15 feet above ground level for flood protection.

FILTERED WATER—Six Layne high service pumps boosting filtered water into distribution system. Five are 12 MGD-285 ft. TDH, 700 hp—4160 volts—1185 RPM. Two are variable speed units. The sixth Layne Pump is a 6 MGD-285 ft. TDH, 400 hp—4160 volts—1185 RPM. All pumps operate through the central control panel.

LAYNE OFFERS COMPLETE WATER SERVICE: Initial Surveys • explorations • recommendations • site selection foundation and soil-sampling • well drilling • well casing and screen • pump design, manufacture and installation construction of water systems • maintenance and service • chemical treatment of water wells • water treatment—all backed by Layne Research. *Layne services do not replace, but coordinate with the services of consulting, plant and city engineers.*

City of Springfield, Ohio



Layne SINCE 1882

WORLD'S LARGEST WATER DEVELOPERS

LAYNE & BOWLER, INC., MEMPHIS

GENERAL OFFICES AND FACTORY, MEMPHIS 8, TENN.

LAYNE ASSOCIATE COMPANIES THROUGHOUT THE WORLD

Sales Representatives in Major Cities

Be sure to drop by the Sanfax exhibit at the Public Works Congress & Equipment Show*

*COLISEUM
New York, Aug. 14-17

Booth No. C-32

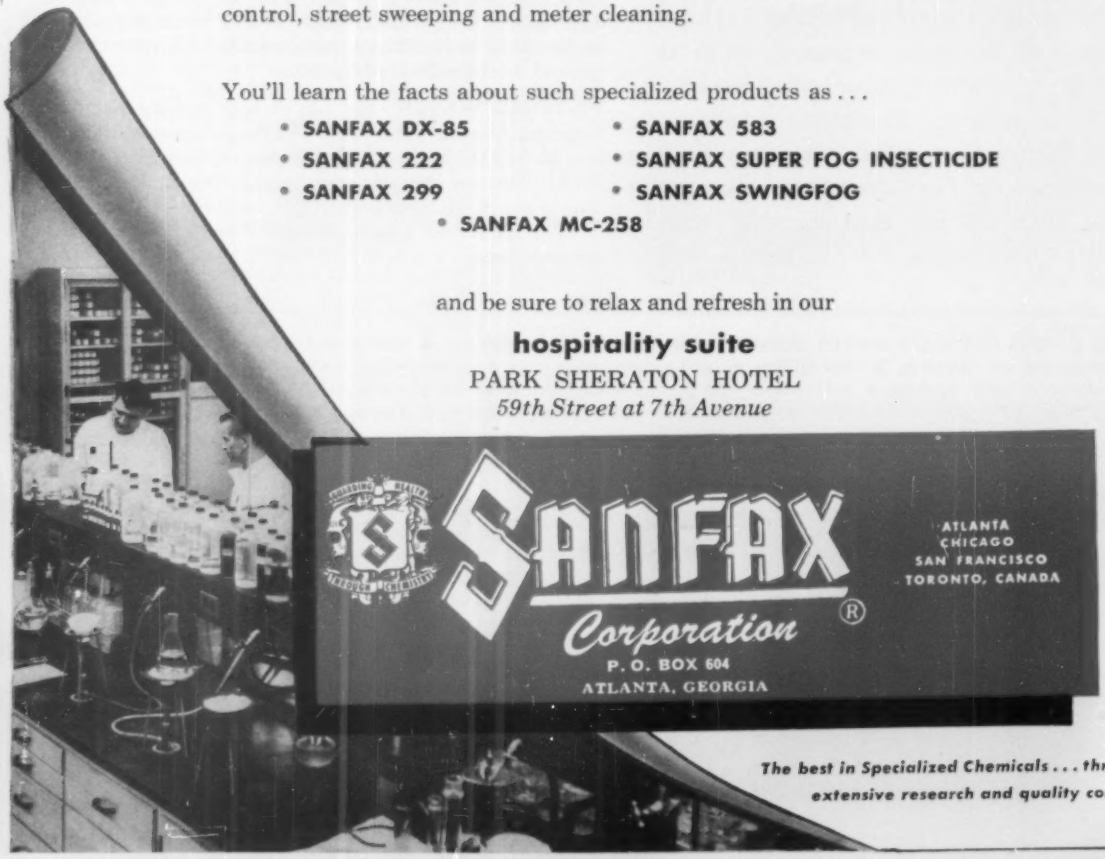
. . . and talk with our sales engineers. They'll be happy to discuss any problems and render expert advice on odor control, sewer line maintenance, insect control, street sweeping and meter cleaning.

You'll learn the facts about such specialized products as . . .

- SANFAX DX-85
- SANFAX 222
- SANFAX 299
- SANFAX 583
- SANFAX SUPER FOG INSECTICIDE
- SANFAX SWINGFOG
- SANFAX MC-258

and be sure to relax and refresh in our

hospitality suite
PARK SHERATON HOTEL
59th Street at 7th Avenue



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ATLANTA, GEORGIA

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CHICAGO
SAN FRANCISCO
TORONTO, CANADA

The best in Specialized Chemicals . . . through extensive research and quality control.

Have You Problems?

These Free Booklets Will Help You

Check over these listings which will provide you with important up-to-date information on equipment and services that will assist you in solving municipal problems.

Write to address given or circle corresponding number on free post card on page 55.

A New Type Water Storage Tank

104 A 4-page brochure will introduce you to the Cylindroid, a ground-level, high-capacity reservoir designed to meet a critical need among growing communities for a low-cost reservoir that can be built to any capacity to meet present and future needs. For a copy, write GRAVER TANK & MFG. CO., DIVISION, UNION TANK CAR CO., EAST CHICAGO, IND.

Diesels for Tractors, Front-End Loaders

105 Designed for dependability and economy in a variety of medium-capacity earthmoving equipment, these C&J diesels provide a wide range of horsepower (70 to 180 hp) in 4- and 6-cylinder block—naturally aspirated, supercharged and turbocharged designs. All 15 models are described in literature available from CUMMINS ENGINE CO., INC., COLUMBUS, IND.

Hydraulically-Elevated Aerial Ladders

106 These units are designed to bring efficiency, safety and economy to overhead jobs such as tree trimming, traffic signal and street light maintenance. Construction features, general description and application information are covered in latest bulletin available from McCABE-POWERS BODY CO., 5900 N. BROADWAY, ST. LOUIS 15, MO.

One-Way Lighting for Cul-De-Sacs

107 Holophane and Line Materials engineers developed this new light distribution for residential street illumination. It directs more illumination on street or sidewalk, keeps stray light from unwanted areas, provides improved beacon effect, speeds lamp replacement. For engineering data, write HOLOPHANE CO., INC., STREET LIGHTING DEPT., NEWARK, OHIO.

Chain Grate and Bar Key Incinerators

108 Both models feature an overlapping link design that eliminates possible clogging or damage to the stoker and reduces sifting of material through the grates. They can be built in any size up to 24 feet wide and in any number of tuyeres for efficient zone control. For descriptive literature, write DEPT. AC-860, ILLINOIS STOKER CO., ALTON, ILL.

Water Filtration by Microstraining

109 Literature highlighting this method of removing suspended matter from water stresses its low initial cost, high filtration efficiency, automatic and continuous operation under open gravity conditions, small head loss, eliminating pumping. For details, operating data and test results, write GLENFIELD & KENNEDY, INC., 706 NORTH AVE., NEW ROCHELLE, N. Y.

Speed Mail Handling— Free Postal Rate Chart

110 A free illustrated booklet explains how postage meters enable any size office to stamp, seal and date a day's mail in just minutes, saving time, money and postage and often enabling mail to catch earlier mail trains and planes. For a copy, write PITNEY-BOWES, INC., 8576 PACIFIC ST., STAMFORD, CONN. And ask for a handy desk or wall chart of new postal rates with parcel post map and zone finder.

Economical Water Meters

111 *Bulletin* 58 describes all the cost-saving features of American Meters, which include simplicity of design, accessibility of working parts, full interchangeability of individual parts and sustained accuracy. For a copy, write BUFFALO METER CO., 2902 MAIN ST., BUFFALO 14, N. Y.

Prefabricated Refuse Burners

112 Literature from WILCO MACHINE WORKS, INC., BOX 3897AC-1, MEMPHIS 14, TENN., points out that these conical-shaped refuse burners are prefabricated in sizes from 15 to 67½ feet diameter, provide low-cost incineration per ton with batch loading or continuous feed, burn all types of combustible waste, trash and garbage, and are approved by fire underwriters.

Custom-Built Ambulance

113 Literature from SHOP OF SIEBERT ASSOCIATES, INC., WATERVILLE, OHIO, highlights that company's new ambulance, custom-built on a Ford station wagon. Features include spacious door opening and loading area, extra-large rear compartment able to accommodate three patients and attendant, balanced body weight, easy maneuverability.

Water Process Equipment

114 Suffering from loss of meter revenue? Plagued by customer complaints? Red water and turbidity the culprits? GENERAL FILTER CO., BOX 350, 925 2ND ST., AMES, IA., can be of help. Write for GFC's new aerator and filter plant bulletins, which contain design data and problem analyses.

Miniature 2-Way Radio System

115 A descriptive bulletin from SEISCOR, BOX 1590, TULSA, OKLA., gives full facts on the Telepath, which is designed for short-range communications, uses a transistorized transmitter receiver unit powered by self-contained batteries, and is seeing service by police and fire departments, CD and rescue teams, and at parking lots, parks and jails.

Handles All Types of Rubbish

116 In a 4-page brochure TRUCK EQUIPMENT CORP., MIDLOTHIAN TURNPIKE, RICHMOND 25, VA., illustrates and describes the features and operation of its Truxmore Container Loader and Truxmore Pakker, which handles all types of rubbish and 1-2 and 3-yard containers. Specifications are included.

New Trees for Streets and Parks

117 Strong and hardy, and new in shape, style and color, these trees adapt to variances in soil and climate. They were developed to bring new accent to municipal landscaping and to meet the need for economical trees. THE COLE NURSERY CO., PAINESVILLE, OHIO, can give you the facts; ask for the current catalog.

Battery-Powered Cranes

118 Illustrated literature, specifications and price lists on all Auto Crane models is offered by the AUTO CRANE CO., 1214 S. NORWOOD, TULSA 12, OKLA. These units rig up fast and feature a combination hoist and boom which make them versatile handling units.

For Quick Repair of Damaged Concrete Work

119 These rigs make possible quick, simple repairs of damaged concrete structures by municipal crews. And they have the capability of supplying full concrete gunning capacity for construction work of all kinds. For technical data and full facts on models and their capacities, write RIDLEY AND CO., INC., 2217 PONTIUS AVE., LOS ANGELES 64, CALIF.

Premade Gutter Brooms

120 It's just plain easy—and it takes only 10 minutes—to strip and refill worn sweeper brush sections with Danline premade gutter brooms. For full facts and illustrated literature, write NEWARK BRUSH CO., 260 MICHIGAN AVE., KENILWORTH, N. J.

Reusable Forms for Straight or Curved Concrete Work

121 If your municipal crews make forms for concrete construction, they'll be interested in these forms which can be used, reused and used again and are flexible enough to be applied in straight line or curved. For the whole story on Gates concrete forming systems and techniques, write GATES & SONS, INC., 80 S. GALAPAGO ST., DENVER 23, COLO.

Direct-Drive Air Compressers

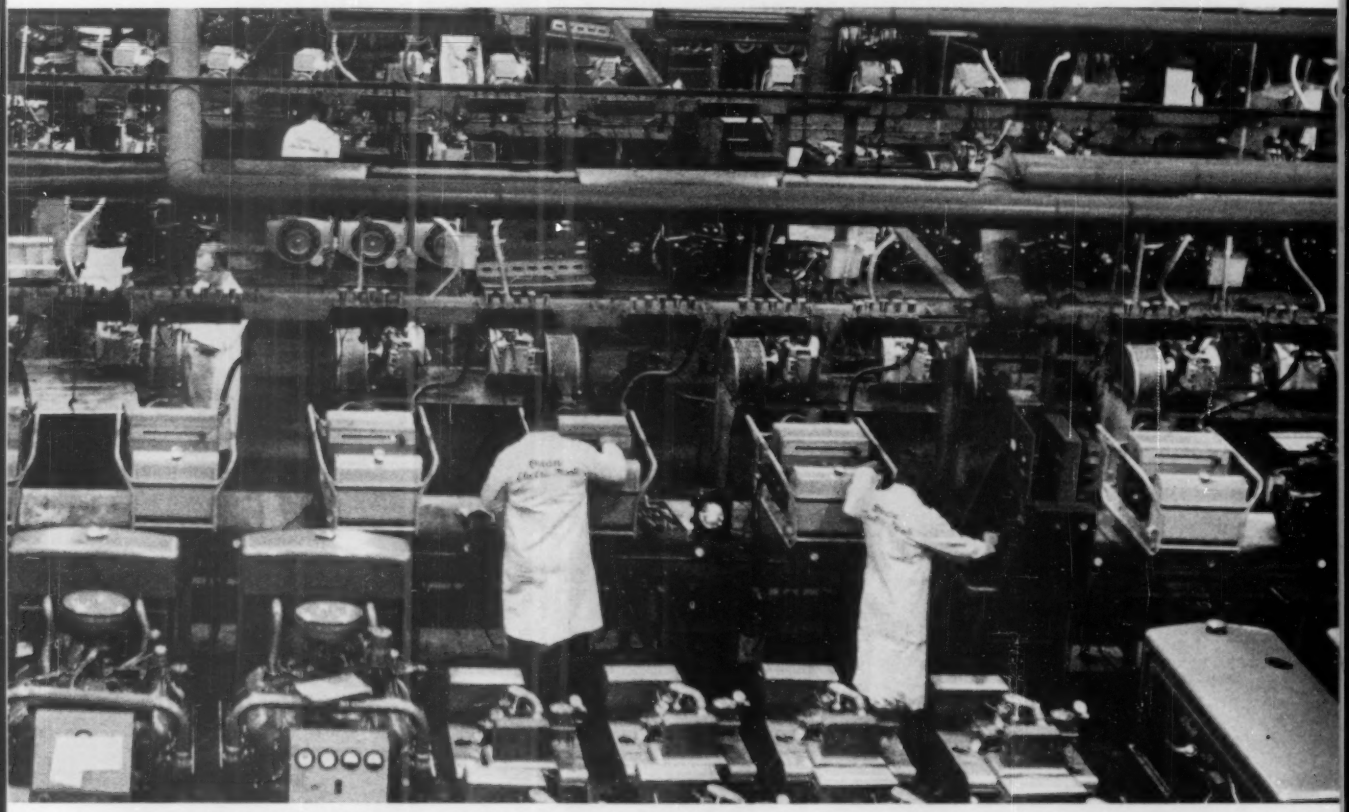
122 These compact, portable, powerful air compressors are air-cooled, feature automatic unloading, and are available in 5- to 55-cfm models. They're built for those services that require real portability, such as maintenance and construction work. Specifications and other data are given in a 4-page booklet. Write P. K. LINDSAY CO., INC., EVERETT 49, MASS.

Masonry Drilling Kit

123 Maintenance crews will find the newest low-cost Truco hand kit enables them to drill holes up to 1½ inches in diameter in concrete, brick, terrazzo, marble and tile—at a reported saving of up to 70%. A new catalog gives full facts on this 17½-pound kit; for a copy, write TRUCO MASONRY DRILLING DIV., WHEEL TRUEING TOOL CO., 152-3200 W. DAVISON, DETROIT 38, MICH.

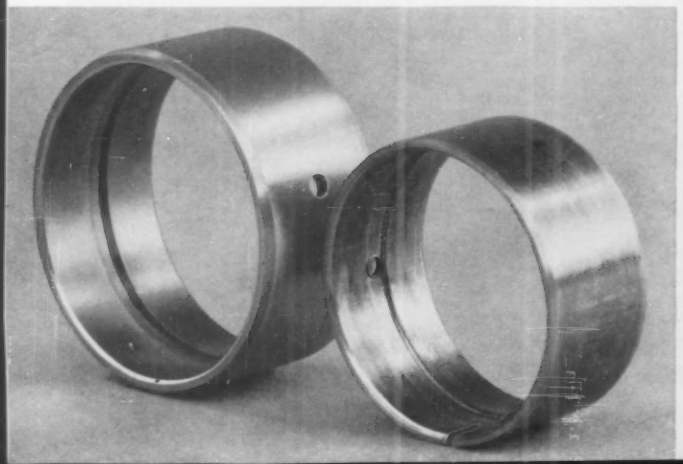
(See page 46 for more Bulletins)

Before it is shipped every run-in and tested

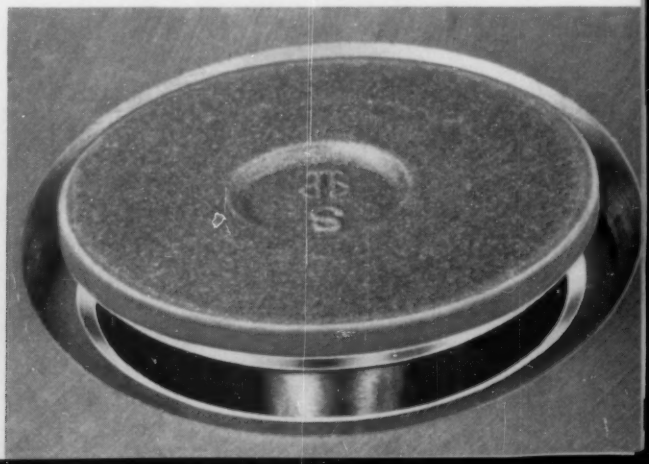


Part of Onan's testing facilities—largest electric generating plant testing area in the industry!

Big, brawny bearings on Onan engines—twice the bearing area of most competitive bearings. Means longer life between overhauls. Another of many ways that Onan is built *up* to performance, not built down to a price.



Stellite coated exhaust valves and valve seats. One of toughest alloys known. Gives you up to 300% longer valve life than uncoated valves. It's the important details like this that make Onan more economical in the long run.



Onan Electric Plant is for hours

And we mean every Onan Electric Plant! This rugged workout under load means every Onan is ready for hard work the day you get it!

Every Onan plant has a nameplate with horsepower and output ratings. Every single plant is put through a series of tough tests to make sure it does what the nameplate says it will do *before it is crated for shipping.*

But this isn't enough. Inspectors from an independent laboratory pay our factory frequent surprise visits. Their job is to check and double-check—our tested plants as well as our testing equipment and methods. They pull a plant off the line, run it, stop it, gun it, stall it, check and recheck. The end result is Onan's exclusive *Performance Certification* . . . your guarantee of getting the power you paid for.

See the dependable Onan Generating Power Plants soon. You can find an Onan distributor in the Yellow Pages in every major city, or write direct.

ONLY ONAN GIVES YOU THIS CERTIFICATION

PERFORMANCE CERTIFIED
We certify that when properly installed and operated this Onan electric plant will deliver the full power and the voltage and frequency regulation promised by its nameplate and published specifications. This plant has undergone several hours of running-in and testing under realistic load conditions, in accordance with procedures certified by an independent testing laboratory.
D. W. ONAN & SONS INC.
Minneapolis 14, Minnesota
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World's Leading Builder of Electric Power Plants

D. W. ONAN & SONS INC., 2644 UNIVERSITY AVE. S.E., MINNEAPOLIS 14, MINN.

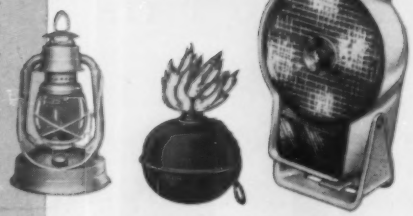
It's Summer... more highway projects... more traffic, too!

Whatever the season, wherever the road . . . it's always the right time to adequately light your highway hazards. Protect the public and you protect yourself.

NEW! DIETZ HAZARD WARNING PLANNER

A Practical On-the-Job Tool! Quickly and easily shows how, when, and where to use each type of warning light for maximum safety under all weather conditions and all types of roads and speeds.

Send $1. for each Planner — personalized with your name



LANTERNS TORCHES VISI-FLASH

Use Dietz Visi-Flash Lights to alert the oncoming driver. Brightest, safest, most trouble-free flashers on the market. Warn: "Danger Ahead" for up to 1500 hours without changing batteries.

Use Dietz Lanterns to locate hazard in relation to driver's position. Show exact location, shape, extent, and boundaries of hazard area. Burn up to 100 hours.

Use Dietz Torches to guide driver around the hazard. Fully illuminate the danger in every weather. Burn up to 48 hours on low cost kerosene.

R. E. DIETZ COMPANY
Dept. 98, 225 Wilkinson St., Syracuse 1, N. Y.

Go **DIETZ** *and you go Safely*

FREE catalogs

You will find of interest

Write to address given or circle corresponding number on free post card on page 55.

Adjustable Valve Boxes For Water, Gas Service

124 You can be sure that water and gas distribution valves are handy and workable when protected by adjustable valve boxes such as these. Opelika will send literature on its two-piece (5¼") sliding or screw-type cast-iron valve boxes, covering 4" through 10" valves, and three-piece (5¼") valve boxes supplied with bases for 4" through 24" valves. You also will get information about its complete line of service and roadway boxes, manhole rings and covers. Write OPELIKA FOUNDRY CO., P. O. BOX 326, OPELIKA, ALA.

Tarco Products

125 The full complement of equipment manufactured by TARRANT MFG. CO., SARATOGA SPRINGS, N. Y., has been gathered in this folder. Included are materials spreaders; vacuum leaf and litter collectors; aggregate and material dryers; sprayers for cold patching, weed spraying, sub-sealing, waterproofing and painting; refuse receptacles, and tar and asphalt pots-buckets-dippers.

For Better Traffic Line Markings

126 Traffic paint bonds to pavement better, with greater longevity and visibility, when pavement is precleaned with this new self-propelled, high-speed sweeper-blower unit, which is reported to save the service of one operator and two pieces of equipment. For descriptive literature, write TOPEKA HIWAY MOWER, INC., 632 E. 7TH ST., P. O. BOX 720, TOPEKA, KANS.

A Fuel Source Revisited

127 Use coal as fuel for municipal services and institutional heating? Why not, asks CHESAPEAKE AND OHIO RAILWAY, TERMINAL TOWER, CLEVELAND 1, OHIO, which offers data that will help you rediscover the value of bituminous coal as a fuel source and free consultation by its fuel engineers on problems of combustion, application, equipment or plant arrangement.

Outlasts Metal Signs 3 to 1

128 Arizona now uses overlaid plywood for 85% of its highway traffic signs because it stands up longer under abuse from vandals and rugged climate, is easy to fabricate, makes an excellent base for reflectorized material and retains legibility. For detailed specifications and data on overlaid plywood, write DOUGLAS FIR PLYWOOD ASSOCIATION, TACOMA 2, WASH.

Material Spreaders and Snow Plows

129 The spreaders described in literature from THE FLINK CO., 5509 N. VERNON ST., STREATOR, ILL., are designed for one-man operation, low maintenance and lower cost. They perform ably in both ice control and sealcoating work. The snow plows are geared to fast, low-cost snow removal, and include reversible and one-way plows for 1½ to 5 ton trucks and up.

New Sewer Cleaning Tool

130 O'BRIEN MFG. CO., DEPT. PB760, 5632 NORTHWEST HWAY., CHICAGO 46, ILL., reports literature is available on its new 1200-foot capacity power rodder, which features positive drive with powerized driving and pull-back. The unit can be used with 5/16" or ⅜" rod. It's said to be ideal for bucket threader, root cutter and for maintenance of water and conduit lines.

(See page 59 for more Bulletins)

A Complete Line of Pedestrian Signals By ECONOLITE

CAT. 53430G1

..... NEON GRID .....

Long life neon and fluorescent grids illuminate glass lenses, which have weather-resisting ceramic backgrounds, to produce a brilliant, attention-attracting pedestrian message.

Light weight, rugged, corrosion and weather resistant Die-Cast Aluminum Housings; sharp, clear, legible messages; low power consumption; easily serviced from the front—economical, trouble free, dependable.

CAT. 53460G1

CAT. 53050G1

..... BENT TUBE .....

Bright, legible, well-defined messages are spelled out in "Neon" bent tube letters for efficient, economical indication with minimum current consumption.

All units available in a wide variety of messages. Neon grid and bent tube units supplied completely assembled with glass tubes ready for operation.

CAT. 53070G1

CAT. 53040G1

..... INCANDESCENT .....

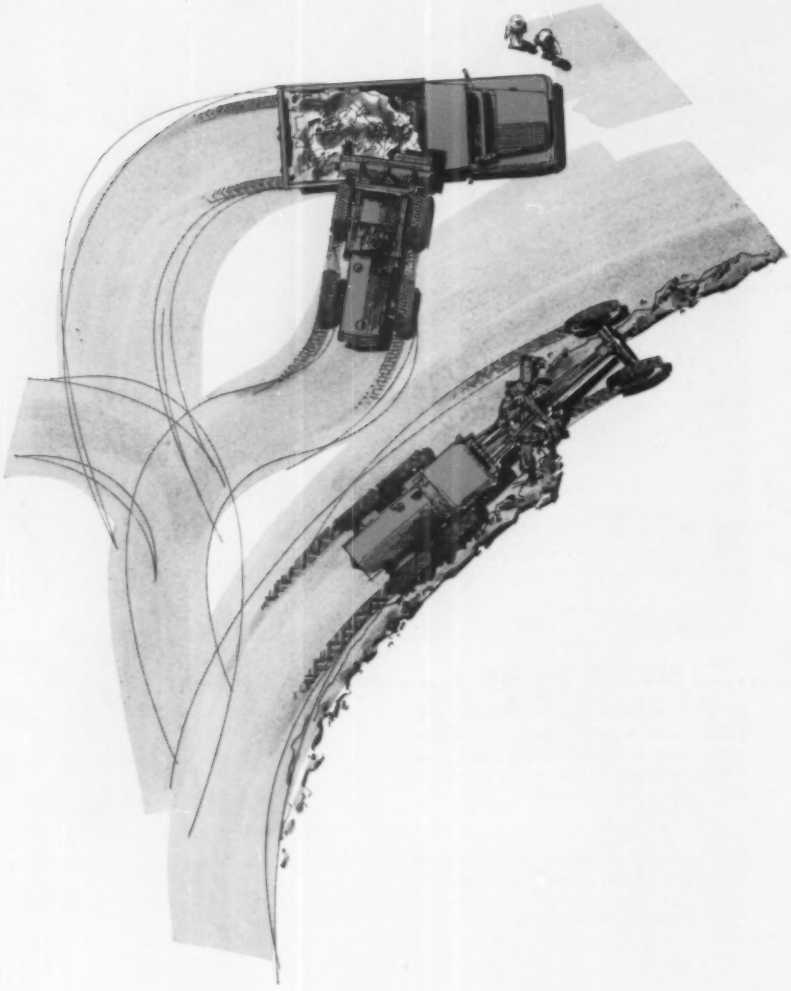
Advanced mechanical design. Utilizes standard traffic signal housings and lamps to produce an improved, brilliant, clear message.

Write for further information

ECONOLITE CORPORATION

ECONOLITE
CORPORATION
Factory and General Offices
8900 Bellanca Avenue
Los Angeles 45, Calif.

CAT. 53040G5



CUMMINS C&J DIESELS 70 TO 180 HP

General Building Contractors, County and Municipal Superintendents, Construction and Mining Operators now can have Cummins C&J Diesel *dependability and economy* in a wide variety of medium capacity earthmoving equipment. This means it's easy to standardize on Cummins in graders, front-end loaders, on-highway dump trucks and the many other construction machines requiring from 70 to 180 horsepower.

Fifteen C&J engines are available—nine J models, six C models. This provides a wide range of horsepower in 4 and 6 cylinder block—naturally-aspirated, supercharged and turbocharged designs.

Also, Cummins C&J Construction Diesels have specialized improvements for earthmoving applications. Your engine will be equipped with a composite dry-type air cleaner, special by-pass oil filter, "bottle-stopper" type dipstick and oil filler cap, and, on supercharged and turbocharged models, a special pressurized crankcase. Only Cummins offers all of these features to minimize the entry of dirt into the engine. Positive lubrication and fuel delivery are assured in high angular operations through the use of a multi-lube pump and special oil pan.

Further, C&J engines now come supplied with Cummins new improved PT fuel system. This system, plus Cummins open-combustion chamber design and four-cycle operating principle, enables you to save as much as 25%—30% in fuel costs over engines of other designs.

More than 500 Cummins Service points are located across the United States and Canada where you can always obtain parts and service. As an added benefit, Cummins Distributors also provide job-site help through regular calls of mobile service trucks.

For more information on the efficiency and low-operating cost of Cummins C&J Diesels, see your nearest construction equipment representative or Cummins Distributor.

CUMMINS

CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA

International Sales & Service • Cummins Diesel International Ltd., Nassau, Bahamas • Cable: Cumnas

Overseas Factory • Cummins Engine Company Ltd., • Shotts, Lanarkshire, Scotland

6-17-60

ALLIS-CHALMERS D

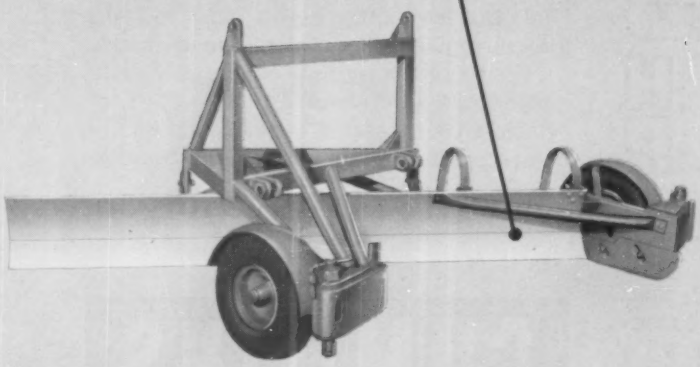
58 NET ENGINE HP

1 HANDLES UTILITY LOADING

Does the thousand and one jobs that usually require special machines. Rugged ¾-yd bucket operates hydraulically. Lets you load out excess material while finishing work is going on.

2 MAINTAINS SHOULDERS IN ONE SAFE PASS

Lets one man rebuild and maintain miles of shoulder every day. Grader blade levels shoulder, fills voids — maintainer blade spreads excess material — trailing striker blade clears highway edge — all in ONE PASS, with the machine safely off the road. The ¾-yd bucket is interchangeable with the maintainer.



ONLY 4-IN-1 GRADER

The Allis-Chalmers Model D grader and its attachments give you timesaving, money-saving flexibility . . . not only for grading, but for loading, scarifying, and maintaining road shoulders, too.

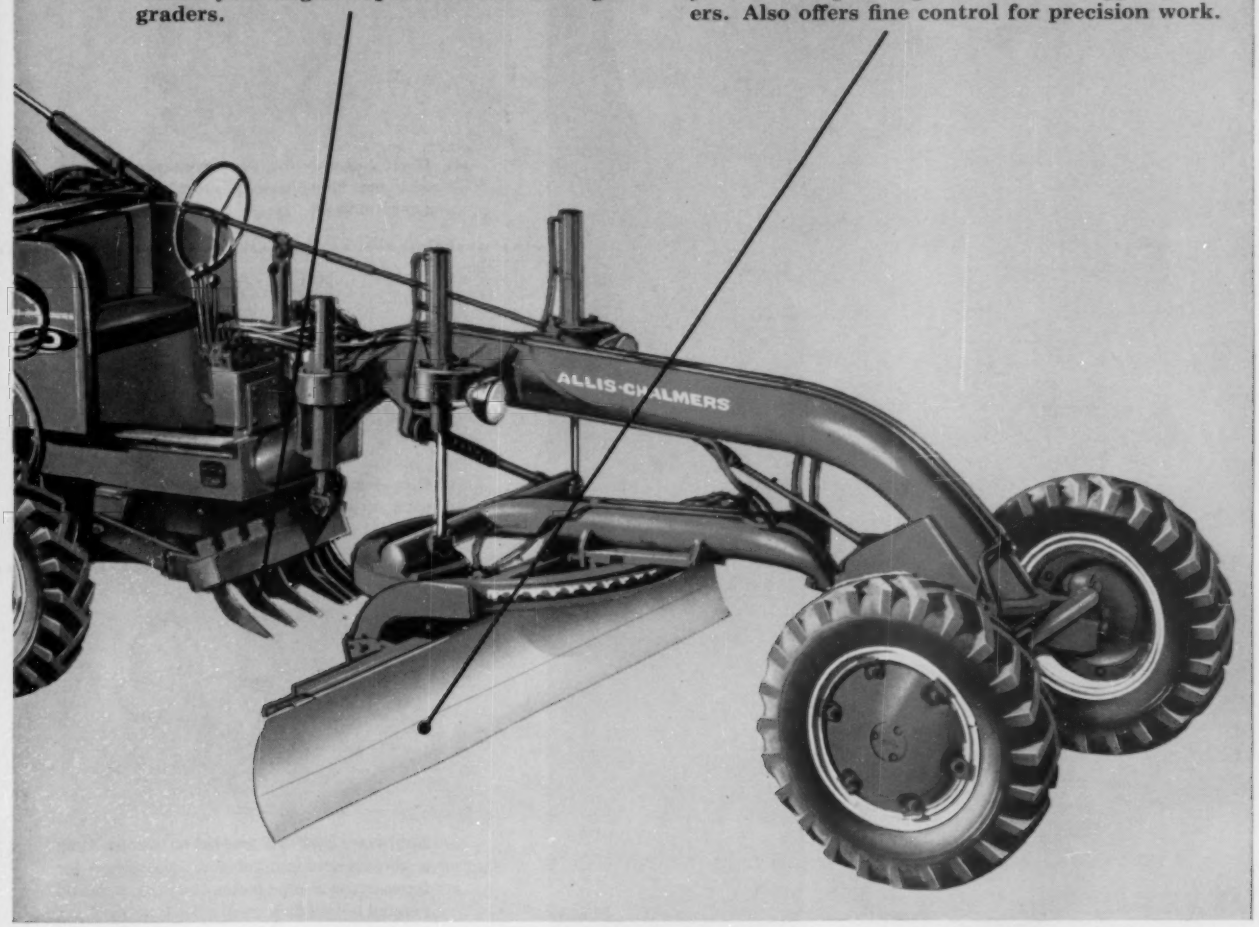
move ahead with

SCARIFIES TOUGH, HEAVYWEIGHT MATERIALS

3 Seven-tooth design cuts 27¾-in. swath, with 4,900-lb penetrating force. Mid-ship-mounted to allow good steering while working. Will scarify material on which you might expect to use the big graders.

BIG GRADING CAPACITY WITH Roll-Away MOLDBOARD

4 Designed to lift and roll loads. Handles more dirt than ordinary blades, yet requires no additional power. With this exclusive moldboard, the Model D will roll loads as big as those you're now pushing with much bigger graders. Also offers fine control for precision work.



ROLL-AWAY is an Allis-Chalmers trademark.

YOU CAN BUY

Up front, the D is a grader — capable of tackling all your road and street work. Attachments add many practical uses — let you put a D on other jobs when grading is finished. Flexibility like this is bound to make a tax dollar go further.

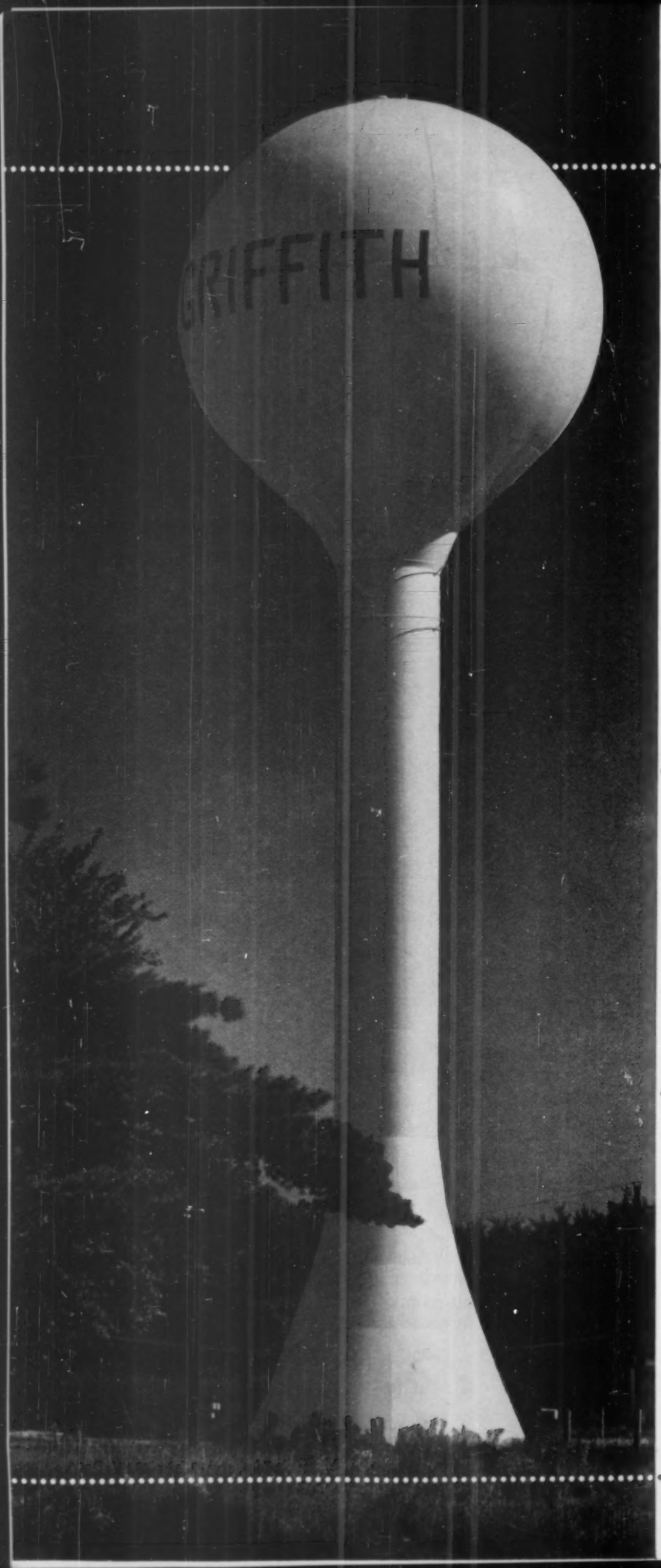
A Model D costs less right from the start. It's scaled to your budget — so low, in fact, that you can own two or three for what a big machine would cost.

You're invited to personally check the D's ability to handle your community's jobs. Your dealer will arrange a demonstration.

Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS A-C ALLIS-CHALMERS

power for a growing world



....You see so many

Civic leaders like Waterspheres because they are landmarks of proud, progressive communities.

City fathers like Waterspheres because each structure is backed by CB&I's seven decades of craftsmanship in steel.

Engineers like Waterspheres because only a minimum of ground area is required for foundations . . . and plates can be pickled and painted before shipment.

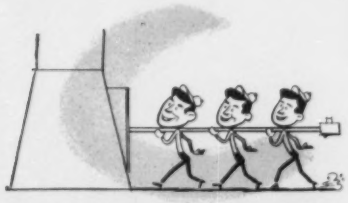
Maintenance men like Waterspheres because the integrated, all-welded structures present a minimum surface to paint and maintain.

M64SCB

WATERSPHERES®

Taxpayers like Waterspheres because they are often responsible for reductions in fire insurance premiums.

Firemen like Waterspheres because they provide round-the-clock emergency water reserves.



Superintendents like Waterspheres because the functional bases can be used for storage or pumping, often eliminating the need for additional buildings.

Kids like Waterspheres . . . best of all. Why? Who knows? But did you ever pass one on the highway without a comment from the back seat? (*Parents like them because they're safe . . . kids can't climb Waterspheres.*)

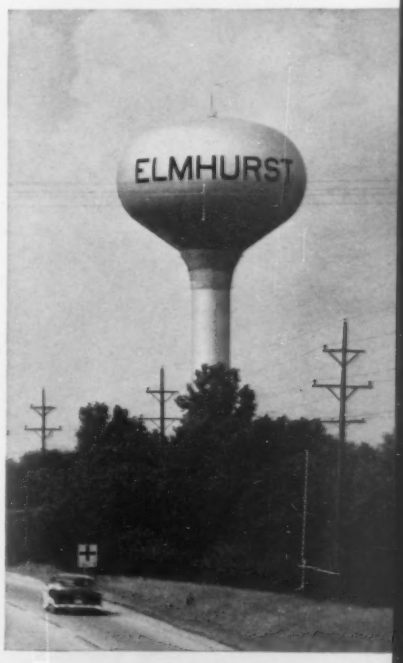
. . . because they satisfy so many people

The final selection of water storage facilities is often the responsibility of a small group. Vast numbers of the population are affected, however. And . . . if this choice is not suitable to the majority of citizens, loud protests are certain to be heard.

This is why more and more communities rely on CB&I Waterspheres (and Waterspheroids ✱) to solve their water storage problems. You just can't miss them. They landmark municipal progress . . . combining beauty and prestige with efficient water system planning. Yes . . . you see so many Waterspheres . . . because they satisfy so many people.

✱WATERSPHEROIDS . . are big brothers to Waterspheres. They differ only in shape and size. Watersphere capacities range from 25,000 to 250,000 gallons. Waterspheroids are available in capacities up to 500,000 gallons.

A brochure containing details and specifications on both the Watersphere and Waterspheroid is available. Ask for Catalog A-40.

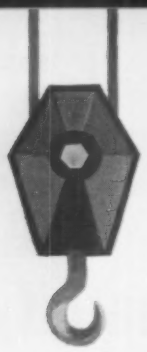


CHICAGO BRIDGE & IRON COMPANY

CBI

332 SOUTH MICHIGAN AVENUE
CHICAGO 4, ILLINOIS

OFFICES AND SUBSIDIARIES IN PRINCIPAL CITIES THROUGHOUT THE WORLD



LONG-TERM ECONOMY

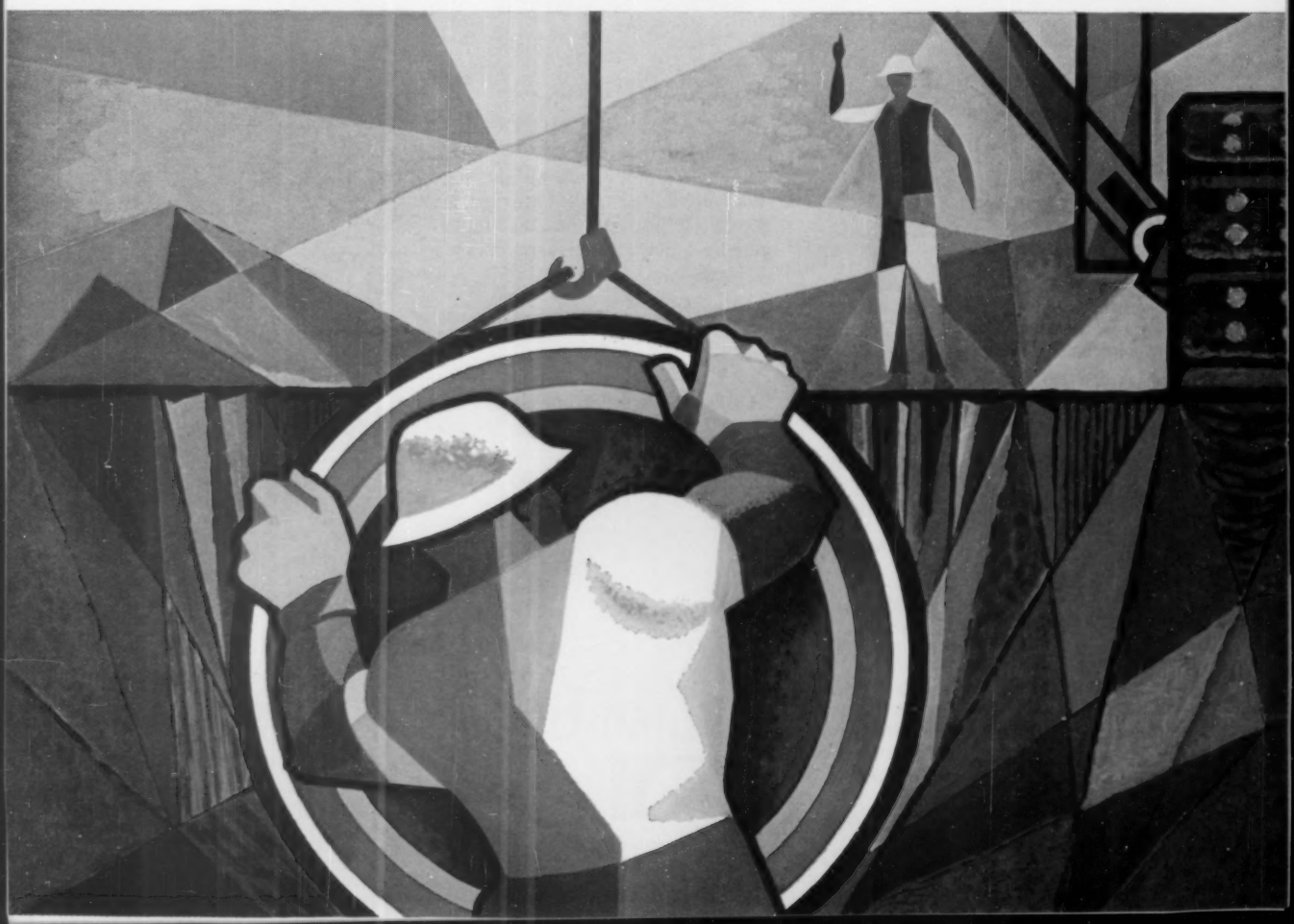
EASE OF INSTALLATION

American Concrete Cylinder Pipe is easy to install, a fact that many contractors have proved repeatedly. Standard laying lengths of 32 feet together with carefully scheduled and executed trenchside delivery reduce handling time to a minimum. ■ The joints of American Concrete Cylinder Pipe are fabricated of accurately sized steel bell and spigot rings which mate perfectly and easily every time. A rubber gasket provides a permanent watertight seal which eliminates the need for tedious caulking and skilled workmen. ■ Properly installed, American Concrete Cylinder Pipe can be backfilled immediately after jointing is completed thereby reducing open trenches to a minimum. ■ The ease and confidence with which you can install American Concrete Cylinder Pipe is only one of the reasons it should be considered for your next pipeline project. Let an American Sales Engineer tell you about the many other long-term economies available to you.

American Pipe and Construction Co. • Los Angeles • San Diego • Hayward • Portland
Bogota, Colombia / **American Concrete Pipe Co. (subsidiary)** • Phoenix • Albuquerque

A MEMBER OF THE AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION

American
PIPE AND CONSTRUCTION CO.



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No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT No. 281, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

THE AMERICAN CITY MAGAZINE
470 PARK AVENUE SOUTH
NEW YORK 16, N. Y.

WHAT'S BUGGIN' YOU, MAN?

If you need information on any type of municipal service or equipment, these reply cards will get action in a hurry.

To THE AMERICAN CITY's Catalog Supply Department:
Please send me literature on items numbered as follows, starting on page 43

104	116	128	140	152	164	176	188	200	212	224	236
105	117	129	141	153	165	177	189	201	213	225	237
106	118	130	142	154	166	178	190	202	214	226	238
107	119	131	143	155	167	179	191	203	215	227	239
108	120	132	144	156	168	180	192	204	216	228	240
109	121	133	145	157	169	181	193	205	217	229	
110	122	134	146	158	170	182	194	206	218	230	
111	123	135	147	159	171	183	195	207	219	231	
112	124	136	148	160	172	184	196	208	220	232	
113	125	137	149	161	173	185	197	209	221	233	
114	126	138	150	162	174	186	198	210	222	234	
115	127	139	151	163	175	187	199	211	223	235	

I would also like to receive manufacturer's booklets on.....

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Address:.....

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A Listing of Your Business Connection Is Important

To THE AMERICAN CITY's Catalog Supply Department:
Please send me literature on items numbered as follows, starting on page 43

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106	118	130	142	154	166	178	190	202	214	226	238
107	119	131	143	155	167	179	191	203	215	227	239
108	120	132	144	156	168	180	192	204	216	228	240
109	121	133	145	157	169	181	193	205	217	229	
110	122	134	14[illegible]	158	170	182	194	206	218	230	
111	123	135	147	159	171	183	195	207	219	231	
112	124	136	148	160	172	184	196	208	220	232	
113	125	137	149	161	173	185	197	209	221	233	
114	126	138	150	162	174	186	198	210	222	234	
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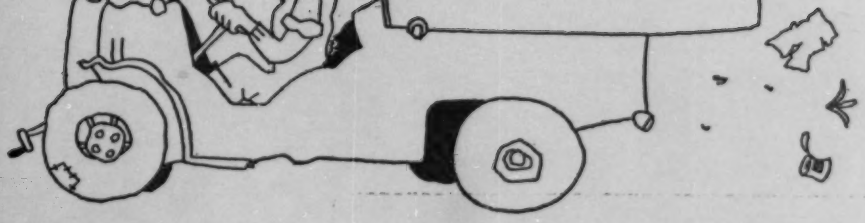

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112	124	136	148	160	172	184	196	208	220	232	
113	125	137	149	161	173	185	197	209	221	233	
114	126	138	150	162	174	186	198	210	222	234	
115	127	139	151	163	175	187	199	211	223	235	

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A Listing of Your Business Connection Is Important

THE DUNCAN GALAXIE OF OUTSTANDING PARKING METERS!

To THE AMERICAN CITY's Catalog Supply Department:

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Save time and effort by using these reply cards when you want additional information on any product or service mentioned or advertised in this issue.

UNIVERSALLY ACCEPTED AS THE MOST DEPENDABLE PARKING CONTROL EQUIPMENT EVER PRODUCED. BACKED BY OVER TWO DECADES OF ENGINEERING EXPERIENCE, TODAY'S "HEAVY-DUTY" DUNCAN-BUILT PRODUCTS OFFER TOP OPERATIONAL EFFICIENCY AT ROCK-BOTTOM MAINTENANCE COSTS PLUS GREAT VANDAL RESISTIVE STRENGTH TO COMBAT THE GROWING PROBLEM OF COSTLY METER VANDALISM. INVESTIGATE THE GENUINE ECONOMY OF DUNCAN'S DEPENDABLE OPERATION. TWO THOUSAND CITIES THROUGHOUT THE WORLD ENJOY THIS ADVANTAGE DAILY . . . WRITE TODAY .

DUNCAN PARKING METER

Division of Motor Products Corporation

835 NO. WOOD STREET • CHICAGO 22, ILLINOIS

REVOLUTIONARY ADVANCE IN SEWER LINE MAINTENANCE

ND-25
SEWER SOLVENT FROM

NATIONAL CHEMSEARCH®

UNCLOGS SEWER LINES DISSOLVES GREASE, ROOTS, CELLULOSE

Activated by liquid in your lines, National's ND-25 generates heat and agitation when poured into a manhole, removing and loosening debris. ND-25 will saponify and emulsify greases and oils... digest roots, paper and other material containing a high percentage of cellulose. More, it's colored for extra convenience. Add ND-25 to strategic manholes and see its effectiveness throughout your sewer line system by observing traces of this color in other areas of the system.

For on-the-spot assistance, see your National Chemsearch representative. Well trained, experienced in dealing with your kind of problems... backed by one of the finest research staffs in the industry.

Leader in Chemical Research — Since 1919

NATIONAL CHEMSEARCH CORP.
DALLAS • LOS ANGELES
ST. LOUIS • NEW YORK

Address all inquiries to: National Chemsearch: 2417 Commerce: Dallas, Texas

CATALOGS *for Improved Municipal Services*

Write to address given or circle corresponding number on free post card on page 55.

Rid Hands of Grime and Grease

131 Hard work doesn't need to be associated with permanently grimy hands. Literature from GOJER, INC., DEPT. AC-790, BOX 991, AKRON, OHIO, describes a hand cleaner ideally suited for use in municipal plants and workshops. It is called Go-Jo and is a powerful antiseptic that protects against industrial dermatitis yet contains soothing emollients to prevent skin drying.

Announces New Refuse Packer

132 Colectomatic MARK II is the designation given a new garbage and rubbish collection body, to debut at the forthcoming annual convention of the American Public Works Association. According to the HEIL CO., MILWAUKEE 1, WIS., it will "outmode all existing specifications for this type of city equipment."

Pinpoint Gas Leakage Early for Safety and Savings

133 In a city-wide gas-distribution system, early, accurate detection, location and classification of gas leakage can be of benefit in many ways. A Heath V-Type Leakage Control Survey combines up-to-date testing devices, complete inspection and analysis of vegetation and soil conditions by highly skilled experts. For full facts, write HEATH SURVEY CONSULTANTS, INC., ZERO LAUREL AVE., WELLESLEY HILLS 81, MASS.

They Show Brighter, Last Longer

134 Subject of a new folder offered by TRAFFFICAIDE CORP., AUBURN, N. Y., are these 4-way reflective specialized pavement markers, which are made of specially compounded vinyl, tapered and precoated for lifetime bonding to pavement. Markings include directional arrows; crosswalks; lane; parking or car limits; letters, words and numerals.

If You've a Problem

135 . . . that concerns water conditioning, ion exchange or waste treatment and would like to solve this problem in an intelligent, comprehensive way, PFAUDLER PERMUTIT INC., PERMUTIT DIV., DEPT. MI-60, 50 W. 44TH ST., NEW YORK 36, N. Y., can be of great help. This specialist in the science of fluid processes will deal with your problem from analysis through test run.

Rotating, Telescoping Boom

136 Here's a unit that lets you work easily in places that an ordinary crane or an A-frame couldn't get near. It's called Hydra-Lift and is completely hydraulic in action and gives inch-by-inch control. It also loads its own truck bed, handles 6,500 pounds, and has simple push-pull levers. For full facts, write PITMAN MFG. CO., 12778 PITMAN RD., GRANDVIEW, MO.

Tubeless Photoelectric Street Light Controls

137 Current literature available from SUNSWITCH DIVISION, RIPLEY COMPANY, INC., MIDDLETOWN, CONN., includes information on a tubeless photoelectric street lighting control (Model 5940) that solves "flashover" problems and conforms with EEI-NEMA standards.

(See page 60 for more Bulletins)

FOX spreader feature No. 2

Heavy-duty feed auger. Each end mounted outside the box* on dual tapered roller bearings . . . protected and sealed from abrasives. Easily accessible for once-a-year lubrication.

Heavy-duty auger feed saves 90% on maintenance

Do you get the "winter blues" caused by constant breakdowns of spreading equipment? Do you worry about broken feed apron chains and drag bars? Chances are, if you own other spreaders you've had such experience. Your service men work overtime . . . plus the 2 or 3 men it takes on the truck.

The solution—Fox Mountable Material Spreaders! Four big, heavy-duty models . . . 5 to 12 cu. yd. capacities. Highly efficient *auger* feeder eliminates hundreds of moving parts common to troublesome chain and apron units.

Even flow saves up to 40% on materials. Easily handles sand, salt, cinders, chips and calcium chloride. *Users say maintenance is cut 90%.*

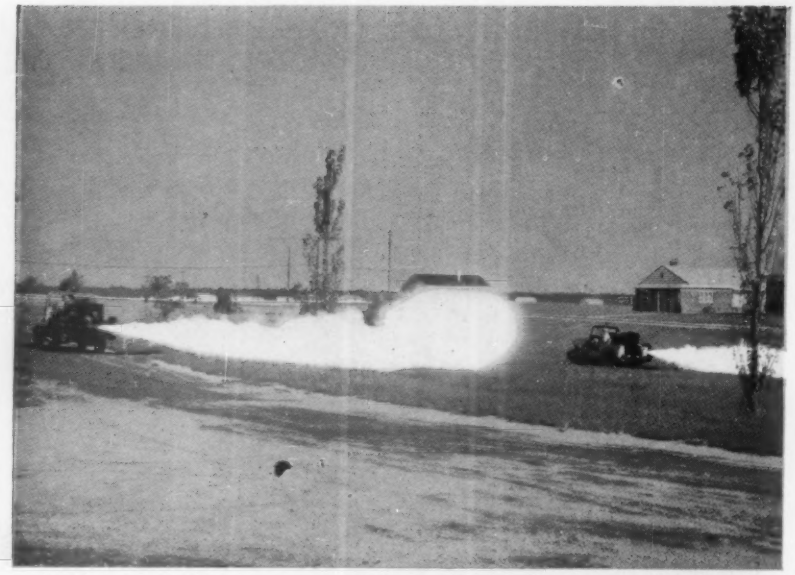
But, materials and maintenance aren't your only savings . . . you save on manpower, too. It takes only one man to operate the Fox. With Dash-Mounted Remote Controls *inside* the cab, he starts the 18 H.P. spreader engine, sets spreading rate and flicks on the electric clutch switch. He's in business . . . smoothly and evenly spreading in widths from 8 to 40 feet, and at truck speeds from 5 to 40 miles per hour. Spreads under cars . . . ahead of rear truck wheels for added traction. When the job's finished, remove the unit (on or off in only 15 minutes). Frees truck for other work.

To see all the Fox Features
ASK FOR A DEMONSTRATION

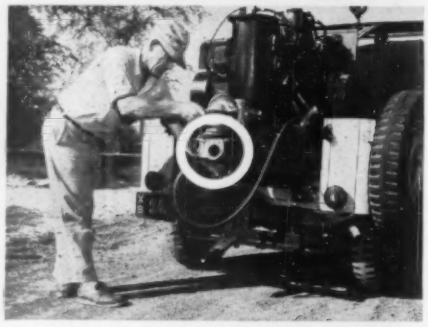
The Fox Materials Spreader will cut your labor, time and equipment expenses to the bone. A catalog . . . case history reports . . . even a no-obligation demonstration are yours for the asking. *Write, call or wire collect for the name of the nearest Fox distributor, who will gladly give you a demonstration.*

* Exclusive Fox patent.

FOX RIVER TRACTOR CO. ROAD MACHINERY DIVISION
Dept. R15, 1020 N. Rankin St. • Appleton, Wisconsin • Phone: REgent 4-1451



Fogging with LETHANE 384 *in Cape May County, New Jersey.*



HEAT-STABLE
LETHANE 384 *is unaffected by high temperature as it passes this critical hot zone on the fogging machine.*

Most effective knock-down agent for fogging...

LETHANE 384

Anyone faced with the problem of controlling mosquitoes... and the responsibility of using public or private funds to accomplish it... should be totally familiar with LETHANE 384. Highest percentage of knock-down and kills is assured when LETHANE 384 is used as recommended in fogging concentrates and adulticiding sprays... alone, with DDT or with malathion. Be sure your mosquito control program is built around economical, heat-stable LETHANE 384. Write to our Sanitary Chemicals Dept. for complete information.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

LETHANE *is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.*

YOU NEED *These catalogs*

Write to address given or circle corresponding number on free post card on page 55.

New Wire Street Sweeping Brush

138 If you want to sweep streets cleaner and at low cost, you'll want to obtain a copy of the folder being offered by ROADMASTER BRUSH CORP., 2331 MORRIS AVE., UNION, N. J. It discusses the newest in wire street sweeping brushes — Uni-Sweep — whose radially convoluted design eliminates spacers and winding, reduces core weight and speeds assembly.

"Across-the-Board" Help with Municipal Problems

139 If you've problems on odor control, sewer line maintenance, insect control, street sweeping and meter cleaning and would like information on specialized products geared to deal with these problems, write SANFAX CORP., P. O. BOX 604, ATLANTA, GA.

Rehabilitate Pipe Lines In-Place

140 Now you can re-line cast iron, steel concrete and wrought iron pipe lines (down to 4") in place without removing pipe, without disturbing traffic and inconveniencing pedestrians. For details on the Spunline method, write PIPE LININGS INC., P. O. BOX 457, 2414 E. 23rd ST., WILMINGTON, CALIIF.

Heavy-Duty Snow Plows

141 Reversible, one-way, V, and rigid plows—all rugged, heavy-duty performers engineered to provide safe, speedy removal of snow at low cost and to operate smoothly and efficiently under the most adverse conditions. You'll find details in literature available from GOOD ROADS MACHINERY CORP., MINERVA, OHIO.

Fast, Low-Cost Stump Removal

142 Illustrated literature from VERMEER MFG. CO., 1452 W. WASHINGTON, PELLA, IA., gives complete information on that company's Pow-R-Stump Cutter, which saves manhours and dollars by removing any size stump in minutes. One-man operated, it allows close quarter cutting to sidewalks, buildings, curbs and driveways, without damage.

Wherever High Lighting Levels Are Desirable

143 *Bulletin* No. 59176 gives complete information on the Line 2A2 Luminaire, newest addition to L-M's complete line of mercury lighting. This integral ballast fixture accommodates white, clear or color-corrected mercury lamps through 400 watts. For a copy, write LINE MATERIAL INDUSTRIES, OUTDOOR LIGHTING DIV., MILWAUKEE 1, WIS.

Diatomite Filtration

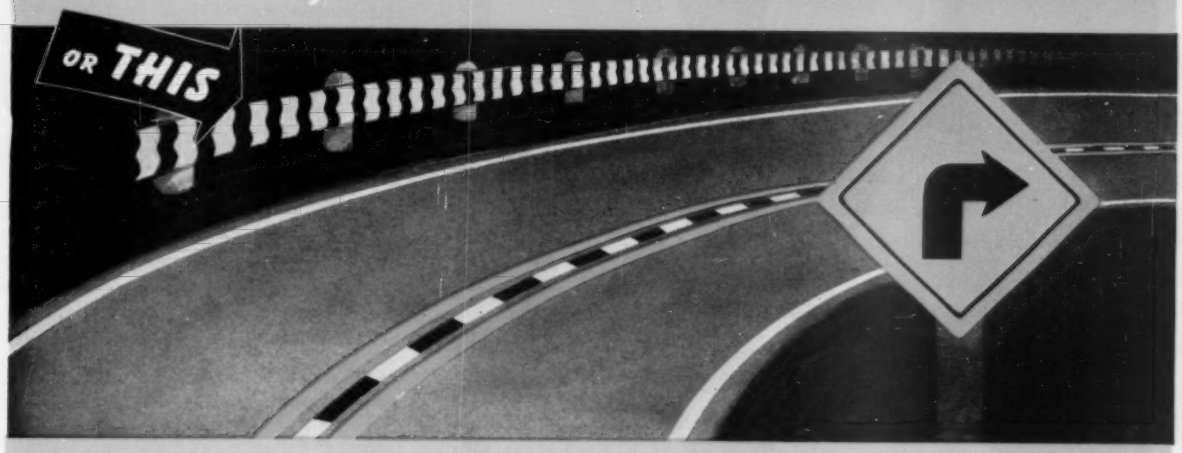
144 Free technical reprints and an illustrated brochure give full facts on Celite, a diatomaceous silica product for use as filter media in water treatment plants to effectively remove suspended solids and lower water turbidity. Write JOHNS-MANVILLE, BOX 14, NEW YORK 16, N. Y.

Portable Sandblaster

145 This 23-pound unit cleans cement, rust and paint from equipment and tools, leaving a clean, dry surface that provides excellent bond for new paint. The air supply of Handi-Blast is consumed at the rate of approximately 8 cfm using the furnished 3/32" nozzle and the air supply from a 2-hp compressor. For illustrated 4-page bulletin, write HANDI-BLAST DIV., HAMILL MFG. CO., INC., WASHINGTON, MICH.

(See page 63 for more Bulletins)

DO YOUR TRAFFIC SIGNS LOOK LIKE...



FLEX-O-LITE

LEAD-FREE REFLECTIVE GLASS BEADS COULD MEAN THE DIFFERENCE

Signs employing the finest reflective materials are adversely affected in a number of ways, such as by moisture, thermal changes and dirt . . . as well as acts of vandalism, accidental breakage and normal wear and tear. Further, the sulphides in industrial fumes attack glass beads containing lead, causing them to turn dark, with a consequent loss of their reflectiveness and visibility. Maintaining adequate visibility through fair weather and foul for maximum safety is a *must*. To ignore this fact is bargaining with lives. So, it is just common sense to buy lead-free beads that won't turn dark. That's why street and highway engineers specify Flex-O-Lite Lead-Free Reflective Glass Beads —with full confidence in their maximum brilliance and lasting reflectivity throughout a longer life. Specify the beads proved best by test. Insist on Flex-O-Lite Lead-Free Reflective Glass Beads. Write for free, informative brochure.

- **#831 REFLECTIVE GLASS BEADS**—Best for white and yellow signs. Meet and exceed all test requirements . . . microscopic, acid, sodium sulphide, spherical content, gradation.
- **FREE-FLOWING REFLECTIVE GLASS BEADS**—Won't agglomerate. Contain no injurious waxes, oils or resins. Offer perfect adhesion to any suitable traffic bead binder. Economical.
- **TYPE H SAFETY SPHERES**—Approximately fifteen times brighter than standard highway beads. For reflectorizing guard rails, curves, bridge abutments, safety islands, etc. Offer maximum reflectivity at lowest cost.
- **FLEX-O-LITE FREE-FLOWING TRAFFIC LINE BEAD DISPENSER**—New, simplified. Affords years of trouble-free operation. Ideal for municipal and highway use. Attaches to any traffic line paint machine. Satisfaction guaranteed.
- Ask about our Sign Bead Applicator.

FLEX-O-LITE

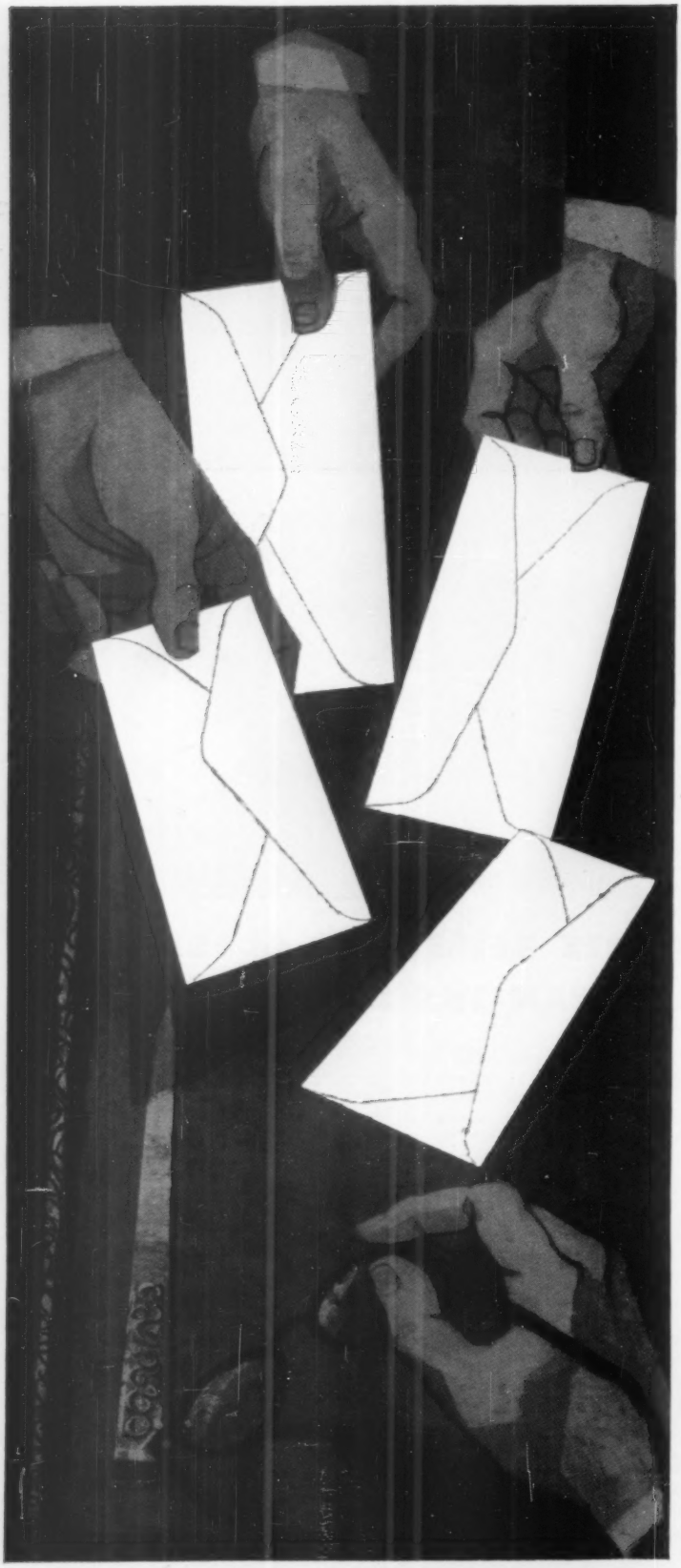
FLEX-O-LITE MANUFACTURING CORP.

8301 Flex-O-Lite Drive, St. Louis 23, Missouri

Flex-O-Lite of Canada, Ltd., P. O. Box 216, St. Thomas, Ontario, Canada • Paris, Texas

MAKERS OF DROP-ON • FREE-FLOWING

STANDARD • MILITARY • MOISTURE-PROOF • HIGH AND MEDIUM INDEX SIGN BEADS



How to be sure you make the right choice after the Rock Salt bids are in

FIRST consider the company behind the product. What is its reputation, who does it serve, what are its resources? In terms of reputation, service and resources, the Morton Salt Company is the leader in the industrial salt field. Morton's outstanding reputation has been built on years of service to industries and municipalities throughout the United States. Now Morton, America's only nationwide salt company, can offer rock salt for ice control to users everywhere in the country from conveniently located salt sources and warehouses. And Morton numbers among its rock salt customers hundreds of towns and cities and many of the nation's counties, states and toll roads.

NEXT satisfy yourself that the bidder can keep his promise. Make sure he can deliver rock salt from a source near you, the fastest and most economical way. To better serve rock salt customers in the East and Midwest, Morton recently opened a giant new rock salt mine strategically located at Fairport, Ohio. The storage, loading and transportation facilities at the Fairport Mine, like the facilities at other Morton sources, insure you prompt delivery on whatever quantity of rock salt you order.

NOW make your purchasing decision. Base it on your evaluation of the company, its record and its ability to serve you. When you decide on Morton you can rest assured that you have made the wisest choice. You can depend on Morton to give you dependable prompt service on the rock salt you need, when you need it.

MORTON SALT COMPANY
INDUSTRIAL DIVISION

110 No. Wacker Drive, Chicago 6, Illinois

YOU NEED *These catalogs*

Write to address given or circle corresponding number on free post card on page 55.

To Boost Water Yield

146 . . . from well supplies that are sluggish or suffering from excessive drawdown often requires only correct servicing or treatment. HALLIBURTON CO., DUNCAN, OKLA., can provide you with details on services and techniques to meet specific problems—cementing, formation testing, acidizing, formation fracturing, hydro-sonic redevelopment, special tools.

Low-Cost Fluorescent Luminaire

147 In a facts-and-features specification sheet STERNER INDUSTRIES, INC., WINSTED 1, MINN., gives complete information on its high-mounted, high-power, glare-free Regal-Lite fluorescent luminaire, which can be serviced from ground level. It is designed for illumination of parking areas, shopping centers, pedestrian plazas, swimming pools.

Bulletin Highlights Spreaders for Ice Control

148 Illustrated *Bulletin* A-408-B gives full particulars on salt, sand and cinder spreaders that will increase efficiency and bring low cost performance to ice control operations. For a copy, write BAUGHMAN MFG. CO., 307 SHIPMAN RD., JERSEYVILLE, ILL.

Products for Concrete Construction

149 *Catalog* No. 100 covers a wide and varied line of products for use in concrete construction of all types. It includes expansion joints, joint sealing compounds, control joints, sewer joint compounds, water-stops and curing compounds, plus many new products added to the "Sealtight" line. For a copy, write W. R. MEADOWS, INC., 26 KIMBALL ST., ELGIN, ILL.

Elevated Water Storage Tanks

150 In *Catalog* A-40 CHICAGO BRIDGE & IRON CO., 332 S. MICHIGAN AVE., CHICAGO 4, ILL., gives details and specifications on both the Watersphere (capacity range 25,000-250,000 gallons) and the Waterspheroid (capacities up to 500,000 gallons).

To Better Sweep a Street

151 When you use prefabricated Radax street sweeper brooms there are no cores to buy, and you get more sweeping miles per dollar. These brooms are balanced and uniform throughout and are grouped in tufts for greater stiffness and improved sweeping efficiency. For full facts, write RYNAL CORP., DEPT. D, 114 ST. JOSEPH ST., ARCADIA, CALIF.

KOs Mosquitoes

152 Whether used alone, with DDT or with malathion, in fogging concentrates or in adulticiding sprays, heat-stable Lethane 384 racks up a high percentage of knock-downs and kills. For full story, write SANITARY CHEMICALS DEPT., ROHM & HAAS CO., WASHINGTON SQ., PHILADELPHIA 3, PA.

Traffic Sign Catalog

153 This catalog describes and illustrates the entire line of traffic control and parking signs available from GRIMM STAMP & BADGE CO., 8105 ROSALIE, ST. LOUIS 17, MO. They are die-embossed on zinc coated steel; over 200 wordings in stock.

(See page 65 for more Bulletins)

Use Northern Gravel for Rapid Sand Filter

Above is the fine Water Plant of Spirit Lake, Iowa . . . another of the many water plants all over the country that have used filtering material from the Northern Gravel Co. of Muscatine, Iowa.

Filter Sand Specifications

are carefully laid out. The Effective Sizes and Uniformity coefficients used by Consulting Engineers and also recommended by the American Water Works Association are the result of long years of research and experience.

The Northern Gravel Company is equipped to give you prompt shipment whether it be one bag or many carloads, exact to specifications. Filter sand can be furnished with any effective size between 0.35 MM and 1.20 MM.

Chemical Quality

of the filter sand is also important. It must be hard, not smooth, and free of soluble particles. This requires perfect washing and grading facilities. We have every modern device for washing, drying, screening and testing.

Filter Gravel

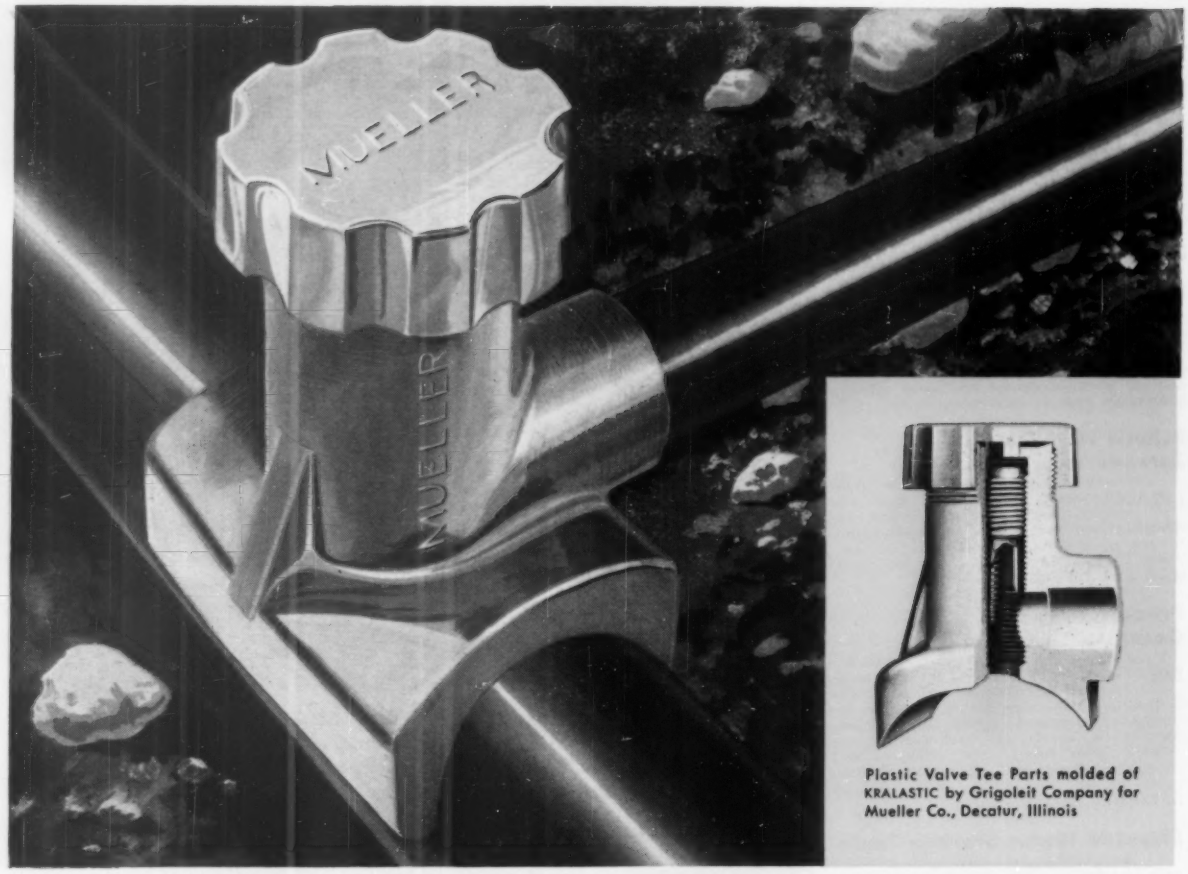
supporting the Filter Sand Bed, must be in turn, properly graded to sizes calculated to support the Filter Sand, and be relatively hard, round and resistant to solution.

Northern Gravel has no equal in facilities and our reserves of both sand and gravel are inexhaustible. Northern Gravel Company has been in business over 45 years. We guarantee uniformity of products and our records enable us to duplicate your requirements on short notice. Our location is central and we have commodity rates in every direction.

Northern Gravel Company

Box 307 **Muscatine, Iowa** **Phone: AMherst 3-2711**

Naugatuck KRALASTIC®



Plastic Valve Tee Parts molded of KRALASTIC by Grigoleit Company for Mueller Co., Decatur, Illinois

KRALASTIC valve tee now makes safe connections under pressure!

This new Mueller valve tee reflects a careful and intelligent application of material and design...not the least sign of which is the use of KRALASTIC for the tee body, cap and plug. (Pilot screw and cutter are of stainless steel.)

KRALASTIC is the unique rubber-resin blend that has proved so outstandingly successful in oil, gas, water, and chemical pipe and fittings that more than 9,000 miles of KRALASTIC systems are already in use. And here in this valve tee KRALASTIC has particular advantages, beyond the fact that it forms a perfect mate to the many miles of KRALASTIC in gas mains.

Because the unit contains a built-in cutter to permit tapping a plastic main under pressure, strength and dimensional stability are of unusual importance. And the use of clamps and drilling tools for installation adds further to the need for toughness, a feature in which KRALASTIC is exceptional.

Look for KRALASTIC not only in pipe and fittings, but in tool handles, machine housings...any place where toughness, strength, light weight, dimensional stability and freedom from corrosion are an asset. For more information on KRALASTIC pipe and fittings, or on KRALASTIC for other applications, write us today.

US RUBBER

United States Rubber

Naugatuck Chemical Division

Dept. 844K ELM STREET
NAUGATUCK, CONNECTICUT

KRALASTIC RUBBER-RESINS • **MARVINOL** VINYLS • **VIBRIN** POLYESTERS

Akron · Boston · Chicago · Gastonia · Los Angeles · Memphis · New York · Phila. · CANADA: Naugatuck Chemicals · Elmira, Ont. · Cable: Rubexport, N.Y.

FREE catalogs

Write to address given or circle corresponding number on free post card on page 55.

Smoke-Free, Odorless, Economical Incineration

154 A new type of refuse incinerator that provides almost completely automatic operation and takes full advantage of the latest materials handling techniques to eliminate litter is designed to bring an economic solution to the problem of sanitary, convenient refuse disposal. For full information, write DRAVO CORP., PITTSBURGH 22, PA.

No Harm Comes to These Hydrants

155 Descriptive literature offered by EDDY VALVE CO., WATERFORD, N. Y., illustrates the advantages of the company's break-flange hydrant, which can be replaced without digging and costly repairs. For should it be struck, the coupling shears off at the ground line and the break flange gives way, without damage to standpipe or nozzle sections.

New Heavy-Duty Water Hose

156 Super-20 is the designation given this new type water hose, developed by SWAN RUBBER CO., BUCYRUS, OHIO, for major watering operations on golf courses, municipal parks and industrial grounds. Tests show it able to withstand pressures in excess of 600 psi and highly resistant to heat, oxidizing chemicals, weathering and hardness.

Factory-Jointed Clay Pipe

157 Descriptive literature is available on Wedge-Lock, the snap-together plastisol joint developed by ROBINSON CLAY PRODUCT CO., AKRON 9, OHIO, for clay pipe. It is designed on the double-ball principle to permit easy and rapid pipe installation, prevent infiltration, exfiltration and penetration of roots.

Chlorine Products Kit

158 Chlorine sanitizing agents used as algaecides, germicides, fungicides, deodorants, bleaches and disinfectants in such fields as water works, swimming pools and sewage works are to be found in this HTH dry, water soluble chlorine literature kit, available from OLIN MATHIESON CHEMICAL CORP., CHEMICALS DIV., BALTIMORE 3, MD.

Precast Concrete Drainage Pipe

159 This illustrated brochure from AMERICAN-MARIETTA CO., CONCRETE PRODUCTS DIV., 101 E. ONTARIO ST., CHICAGO 41, ILL., highlights the versatility of A-M Hi-Hed pipe, which is designed for minimum vertical load and maximum lateral support. Available in sizes up to 144-inch round pipe equivalent, it saves trench width in congested areas.

Fact-Filled Catalog on Refuse Disposal

160 New 28-page *Catalog Brief* 160 explains latest developments in waste and refuse storage and removal in terms of large, portable refuse containers. Available from DEMPSTER BROTHERS, DEPT. AC-8, KNOXVILLE 17, TENN.

Clean Water Meters in 5 Minutes

161 Now you can rid all sizes and types of water meters of dirt, scale, discoloration and paint in less than five minutes, without scratching, scoring or change in precise tolerances. For the complete time- and money-saving story, write VAPOR BLAST MFG. CO., 3037 W. ATKINSON AVE., MILWAUKEE 9, WIS.

Asphalt Paving Booklets

162 For the city official with a paving problem TEXACO, INC., ASPHALT SALES DIV., 135 E. 42ND ST., NEW YORK 17, N. Y., offers assistance in the form of two brochures which provide useful information on various types of asphalt paving for streets, airports and parking areas.

Diatomite Filters— for Standby or Emergency

163 A report from R. P. ADAMS CO., INC., 232 E. PARK DRIVE, BUFFALO 17, N. Y., notes that an increasing number of municipal water systems are using TWF diatomite filters during periods when sand filter beds are being cleared, to provide additional capacity for peak loads, and on the effluent line of sand filters.

Traffic-Line Marking Problems?

164 You can obtain a free analysis and recommendations on your traffic striping problems by writing to M-B CORP., DEPT. AC, NEW HOLSTEIN, WIS., manufacturer of fast, low-cost versatile traffic stripers that paint single, double or triple lines in one or two colors.

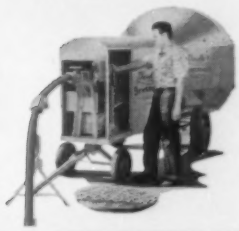
Glare-Free Light for Highway Signs

165 High-level controlled light for highway signs is essential where safe, smooth traffic flow depends on immediate attention to traffic control signs. *Bulletin* 300-21 shows how Fluoresigns provide the essentials for fast, easy reading of traffic signs on today's high-speed highways.

(See page 66 for more Bulletins)

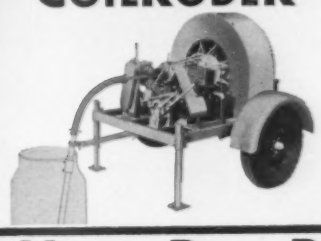
ONE SOURCE for ALL SEWER CLEANING EQUIPMENT "Flexible"

SEWERODER

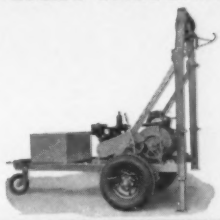


TRUCK-LODER

COILRODER



BUCKET MACHINE



MONORODER

"Flexible" Develops, Manufactures and Sells—

. . . the equipment with the most exclusive features for cleaning your sewers *faster*, safer and more economically.

POWER DRIVE

FLEXIBLE INC.

3786 DURANGO AVE., LOS ANGELES 34, CALIF.
1005 SPENCERVILLE ROAD, LIMA, OHIO
415 S. ZANGS BLVD., DALLAS, TEXAS

CATALOGS *for Improved Municipal Services*

Write to address given or circle corresponding number on free post card on page 55.

New Aluminum Lighting Standards

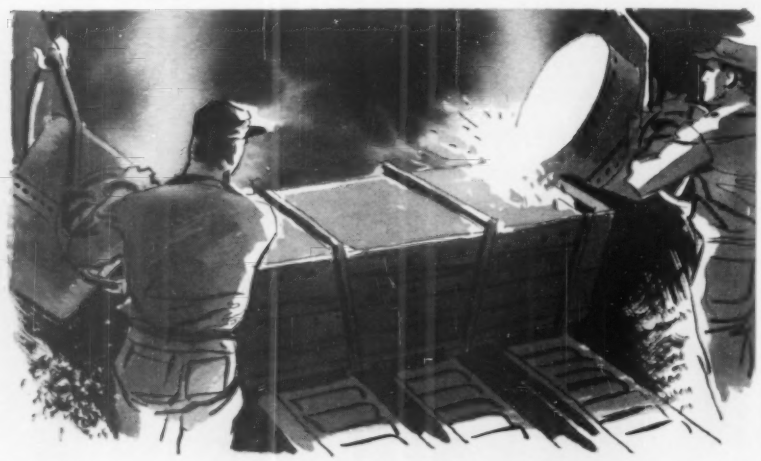
166 Kerrigan reports that its full data catalog for its new line of seamless round tapered aluminum lighting standards for street, highway and area lighting will be ready soon. To reserve a free copy, write DEPT. A-8, KERRIGAN IRON WORKS CO., NASHVILLE, TENN.

Self-Propelled Materials Handling Crane

167 A small, mobile crane with a wide range of unusual applications is the subject of a new 8-page bulletin, available from DROTT MFG. CO., 3126 S. 27TH ST., MILWAUKEE 15, WIS. Called the "Go-Devil," it rotates, lifts, telescopes, hauls, and can be used easily indoors as well as outdoors.

3 New Cat Motor Graders

168 All three motor graders—Models No. 112E, 112F and 12E—incorporate major improvements that substantially increase machine productivity. New design, compact diesel engines, and other new features are discussed in literature, available from CATERPILLAR TRACTOR CO., PEORIA, ILL.



The "3-Ms" in M&H Products

There are 3 Ms in M & H production operations which explains to some extent the wide popularity and increasing sales of M & H valves, hydrants and accessories. The 3 Ms are Men, Machines and Materials. They are the foundation of the superior design, rugged strength and high quality which users of M & H valves and hydrants have so widely recognized.

It requires all three in combination to produce a product which meets M & H standards. M & H foundry raw materials (pig iron, molding sand, everything) and the finished castings (cast iron or bronze) meet latest engineering standards. M & H foundry and machine shop both have efficient, modern equipment. Far more important than either of the foregoing, M & H workmen are craftsmen—skilled in their respective jobs, proud of their work, loyal to their Company and as much interested in making a good valve as is the boss in the office!

So, an M & H customer gets more than just a valve. He gets quality control of materials. He gets improved fabrication by modern machinery. He gets the skillful work of craftsmen who are proud of their job.

These are the 3 Ms which have placed M & H products in the forefront of the American valve and hydrant industry.

(No. 3 of a Series)

M&H VALVE AND FITTINGS COMPANY
ANNISTON, ALABAMA
SUBSIDIARY OF WALWORTH

Package Plant for Subdivision Sewage Treatment

169 In *Bulletin* 6520 INFILCO INC., TUCSON, ARIZ., describes the ACCELO-BIOX, its new, low-cost sewage treatment plant designed to serve small subdivisions, shopping centers and similar projects with population groups ranging from 75 to 3000.

Less Costly Grounds Maintenance

170 Take one Gravely tractor and add 30 quickly interchangeable power tools and attachments and you've got a complete grounds maintenance system designed to save money and time. For full story, write GRAVELY TRACTORS, DUNBAR, W. VA.; request 16-page booklet, "How to Cut Costs."

Playground, Swimming Pool Equipment

171 Well-designed and well-constructed playground, picnic, park, swimming pool and dressing room equipment is the subject of literature offered by AMERICAN PLAYGROUND DEVICE CO., ANDERSON, IND.

Reflective Traffic Striping

172 *Catalog* C-160 discusses a thermoplastic striping material called Catatherm, which hot-extrudes directly and securely onto any pavement. It is said to outlast good quality paint stripes from 9 to 26 times and is highly reflective. For a copy of the catalog, write CATAPHOTE CORP., TOLEDO 10, OHIO.

Dirtmover and Snowfighter

173 Baltimore, Md., employs six 4-wheel-drive, power-steered, torque-converter Michigan tractor shovels the year 'round, using them in winter to plow and load snow and the rest of the year to speed all kinds of dirtmoving and maintenance jobs and to handle clean-up and coverage at landfill sites. For facts on these dependable units, write CLARK EQUIPMENT CO., CONSTRUCTION MACHINERY DIV., 2495 PIPESTONE RD., BENTON HARBOR 19, MICH.

Lightweight Pumps for Suction Lift or Booster Service

174 *Bulletin* WLP-160 gives specifications, performance characteristics and general description of four models of Wonder-Lite self-priming centrifugal-type pumps with dual volute priming. Body and engine are of aluminum, wearing parts of iron. Write CONSTRUCTION MACHINERY CO., WATERLOO, IA.

New Enamels for Highway Signs

175 A new type of enamel combines in a single coat rust inhibition, durability and color retention. It can be made up in almost all colors normally used in highway sign painting. For detailed information, write NATIONAL LEAD CO., 111 BROADWAY, NEW YORK 6, N. Y.

Replacement Parts for Crawler Tractors

176 LEMPCO AUTOMOTIVE, INC., 5446 DUNHAM RD., BEDFORD, OHIO, offers two bulletins on this subject: 4-page "Let's Talk About Grousers" and 6-page "Let's Talk Track Facts," which covers links, bushings, pins and rollers.

Cast Iron Pipe for Liquid or Gas Service

177 Literature from AMERICAN CAST IRON PIPE CO., BIRMINGHAM, ALA., compares cast iron pipe with other types in terms of life, bursting pressure, bursting tensile, impact resistance, beam loads, crushing loads, water absorption, joints and inside diameter.

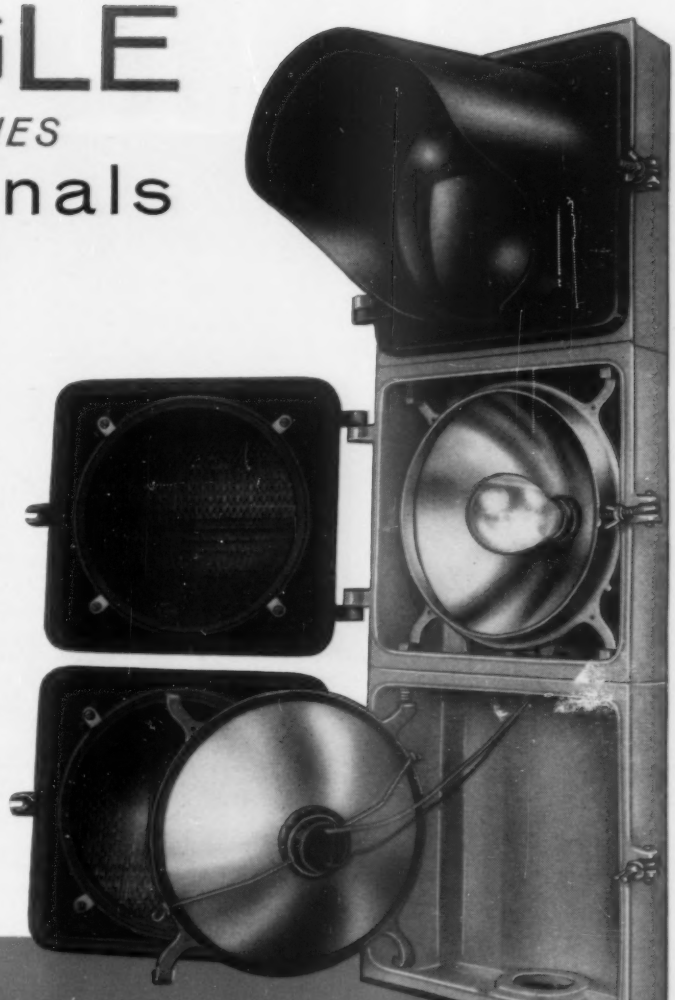
(See page 70 for more Bulletins)

NEW

EAGLE

KB170-KB380 SERIES traffic signals

OFFER MAXIMUM FLEXIBILITY . . .



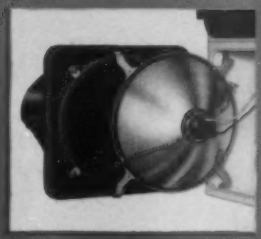
Through EAGLE'S NEW section DESIGN

Eagle's New KB170 Series (8″ signals) and KB380 Series (12″ signals) signal sections are perfectly matched in appearance and may be freely interchanged in assembly. Complete signals have clean, modern appearance with all sections in line, whether made up of all 8″ sections, all 12″ sections, or a combination of 8 and 12 inch sections.

QUALITY FEATURES THAT ASSURE A BETTER SIGNAL

- **Matched Section Design for 8″ and 12″ Signals**
- **All Sections Die Cast Aluminum with Integral Closed Ends — 8″ and 12″ Signals**
- **Neoprene Gaskets Throughout**
- **Silvered Glass or Alzak Reflectors**
- **Anti-Sun Phantom Optical Unit**

All section ends are flat assuring perfect alignment in assembled signals. Serrations provide positive locking of Signal or sections in 5 degree steps.



8″ Signal Fixed Focus Lamp Socket may be rotated for positioning lamp filament. Entire optical unit can be disassembled without tools.

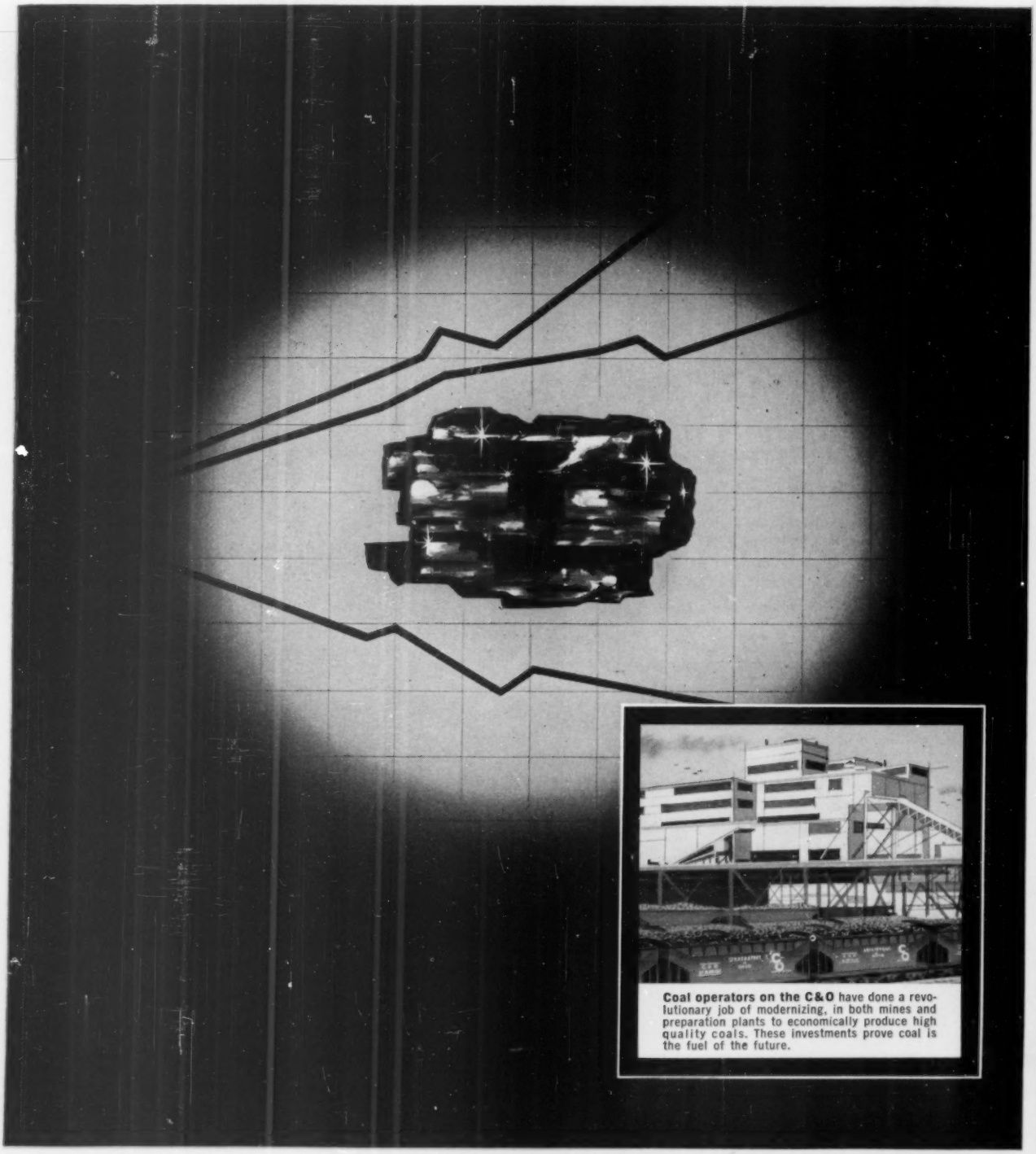
EAGLE SIGNAL COMPANY

A DIVISION OF THE GAMEWELL COMPANY

Municipal Division Dept. AC-860

MOLINE, ILLINOIS

REDISCOV



Coal operators on the C&O have done a revolutionary job of modernizing, in both mines and preparation plants to economically produce high quality coals. These investments prove coal is the fuel of the future.

ER COAL !

COAL IS ECONOMY– proved in countless studies with competitive fuels

As forward-looking fuel users continue to *rediscover coal,* a growing file of case histories proves out the economy, versatility and convenience of coal utilized with modern combustion equipment. Here are a few graphic examples.

A sprawling university undergoes plant modernization, upgrades heating efficiency 75%. Coal saves a military institute $15,041 yearly over competitive fuel. A machine shop saves $7,787. Coal conversion gives a small tool plant completely automatic operation at lowest cost. An automotive assembly plant reports not only fuel economy but low maintenance, high efficiency and cleanliness as well, from its new coal operated steam plant.

The point is this. Modern advances in coal preparation, handling and combustion equipment have vastly improved the advantages of this biggest bargain in fuel. Today it is mined and transported more economically than ever. And coal is the one fuel certain for *centuries, not decades.*

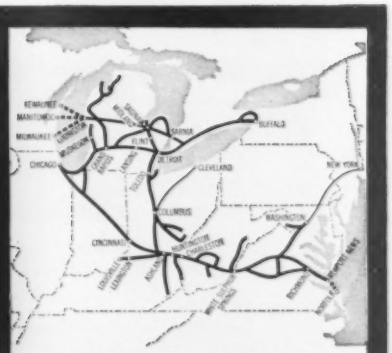
Chesapeake and Ohio Railway

Terminal Tower • Cleveland 1, Ohio

Outstandability in Transportation

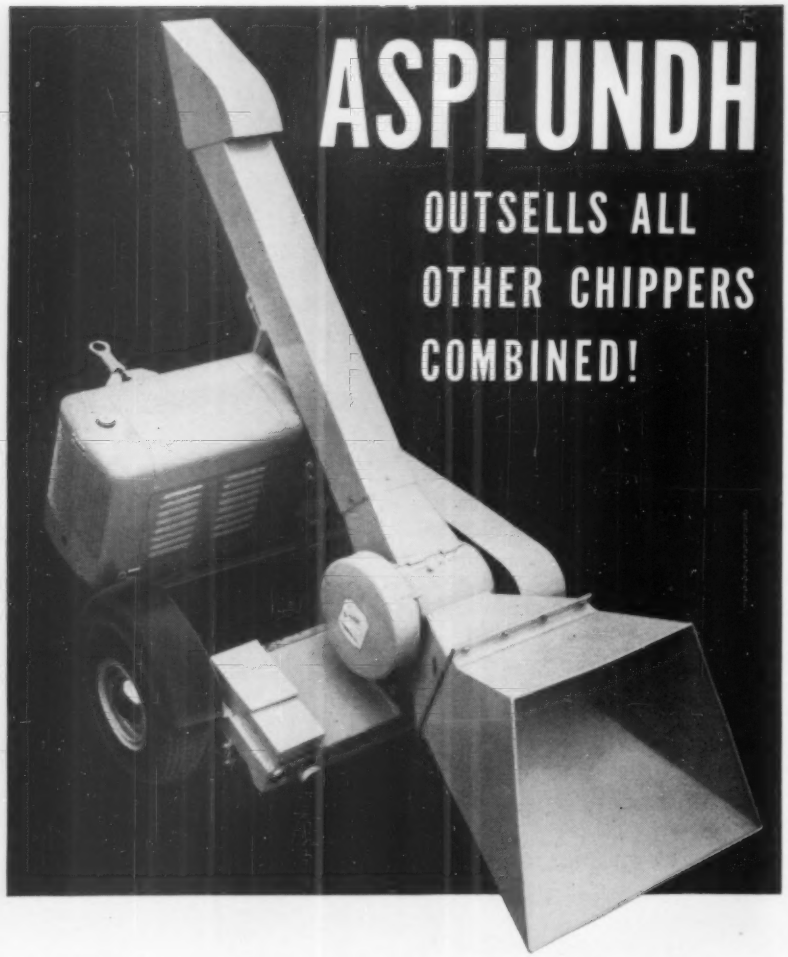
A modern boiler room in pastel colors has a clean, almost clinical appearance. Automatic sealed handling of coal and ash eliminates dust. Advance-design combustion equipment gets top BTU's from low cost coal.

C&O Fuel Service Engineers provide free consultation to C&O patrons on combustion, application, equipment, or plant arrangement problems. Write to R. C. Riedinger, General Coal Traffic Manager, above address.



The 5100-mile Chessie Route directly serves over 300 mines in America's richest bituminous coal reservoir with the finest fleet of 68,000 coal cars. Specify C&O routing for dependable, efficient delivery.

CHESSIE SERVES THE COAL BIN OF THE WORLD



WHY? . . . because only ASPLUNDH gives you . . .

Fastest Chipping Action
—by actual test, it's the fastest chipper made.

Minimum Maintenance
—simpler design and fewer moving parts than any other chipper. Means less down time.

Absolute Safety
—blades are tapered and wedged.

Bulk Feeding Area
—permits larger bulk and larger limbs . . . up to 6″ diameter.

Quick Blade Change
—easy access and simplicity of service.

Telescoping Draw Bar
—couples quickly and easily to various towing vehicles.

Easy Towing
—lower center of gravity, perfect tracking.

Your ASPLUNDH dealer will welcome a side-by-side performance test. Compare—point by point—and you'll see why buyers prefer ASPLUNDH CHIPPERS 4 to 1.

ASPLUNDH CHIPPER COMPANY
501 York Road, Jenkintown, Pa.

By Actual Test the Fastest Chipper Made

Write today for complete information. Ask for prompt, FREE DEMONSTRATION.

FREE catalogs

Write to address given or circle corresponding number on free post card on page 55.

Diesel Engine Crawler Tractors

178 Literature from THE EIMCO CORP., P. O. BOX 300, SALT LAKE CITY 4, UTAH, details the major features of the Eimco 103 line of 100-hp diesel engine crawler tractors. Most of these features contribute to ease of operation, increased safety and greater productivity.

Aluminum Truck Bodies

179 A 16-page booklet explains six major advantages of aluminum truck bodies and shows why they give operators high payload profits. For a free copy, write ADVERTISING DEPT., BROWN TRAILER DIV., CLARK EQUIPMENT CO., BOX 410, MICHIGAN CITY, IND.

Meter Yokes

180 These yokes are made in a variety of types for all kinds of meter pits. When used, meter changes are quick, easy and trouble-free and service piping is not disturbed. Full facts are given in the Ford Catalog; write THE FORD METER BOX CO., INC., WABASH, IND.

Fire Hydrant Facts

181 KENNEDY VALVE MFG. CO., ELMIRA, N. Y., describes its K-11 Safe Top model fire hydrant in *Bulletin* No. 591. Available in 4-, 4½-, and 5-inch sizes and in a variety of pipe connections, K-11 features an "O" ring weather seal and pressure seal and a minimum number of parts.

Caught without Rock Salt?

182 If one of Dame Nature's early snow storms caught you without a stockpile of rock salt last year, you know how easily snow, sleet and freezing rain can paralyze traffic, cause accidents, contribute to business losses. For information on Sterling rock salt, write INTERNATIONAL SALT CO., CLARKS SUMMIT, PA.

Drainage Pipe for Streets, Parks

183 A review of paved-invert pipe and pipe arch performance is given in a new folder—CMS-9260—which includes representative photographs and a selection chart. For a copy, write PRODUCT INFORMATION SERVICE, ARMCO DRAINAGE & METAL PRODUCTS, INC., MIDDLETOWN, OHIO.

Your Water Meters—

184 Breadwinners? Or instruments of a give-away program? Naturally, those that stay on the job, retain their accuracy of measurement over sustained periods, and are low in maintenance costs are the revenue-producers. For literature on such meters, write NEPTUNE METER CO., LIQUID METER DIV., 47-25 34TH ST., LONG ISLAND CITY 1, N. Y.

Accurate Concrete Testers

185 Low-cost plant and job-site testers for cylinders, curbs, blocks, beams and pipes are the subject of a full-line catalog offered by FORNEY'S, INC., TESTER DIVISION, P. O. BOX 310, NEW CASTLE, PA.

Pedestal-Mounted Outdoor Fireplaces

186 A 4-page illustrated brochure describes and gives specifications for three types of outdoor fireplaces for use in picnic grounds, recreation areas, roadside parks. For a copy, write KAY ENTERPRISES, JANESVILLE, IA.

(See page 76 for more Bulletins)

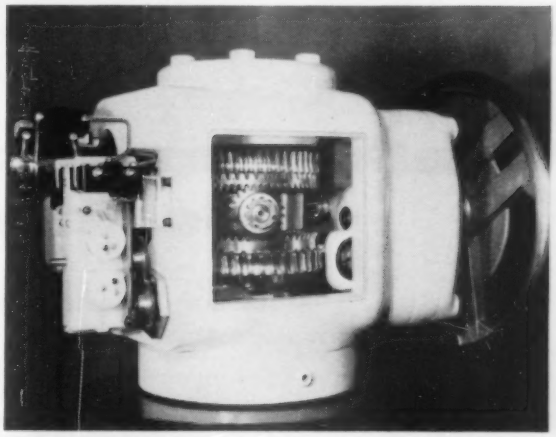
5 SOUND REASONS FOR SPECIFYING PELTON VALVE OPERATORS

Two Pelton Valve Operators afford remote control of gate valves in typical waterworks installation

1. **No clutch—uses planetary gear system**
2. **Torque protection in both directions—provided as standard at no extra cost**
3. **Easily accessible, easily adjustable nylon limit switch, which is noncorroding and durable and offers no lubrication problem**
4. **Flush-mounted limit switch compartment**
5. **Aluminum cover on limit switch compartment reduces weight for easier handling**

The Pelton Valve Operator may be used with a variety of valve types and is adaptable to a completely automated system as well as a simple pushbutton control. At present three motorized drive models of outstanding dependability provide up to 35,000 lb. of thrust for lifting requirements and as much as 6600 in.-lb. of torque. Larger sizes can be built to fill specific requirements. Widely used in filter, water and sewage plants, the Pelton Valve Operator is now also available in explosion-proof cases for oil and gas line application.

For further information, write Pelton Division (B-L-H), 2929 Nineteenth Street, San Francisco 10, Calif., or B-L-H Corporation, Philadelphia 42, Pa.

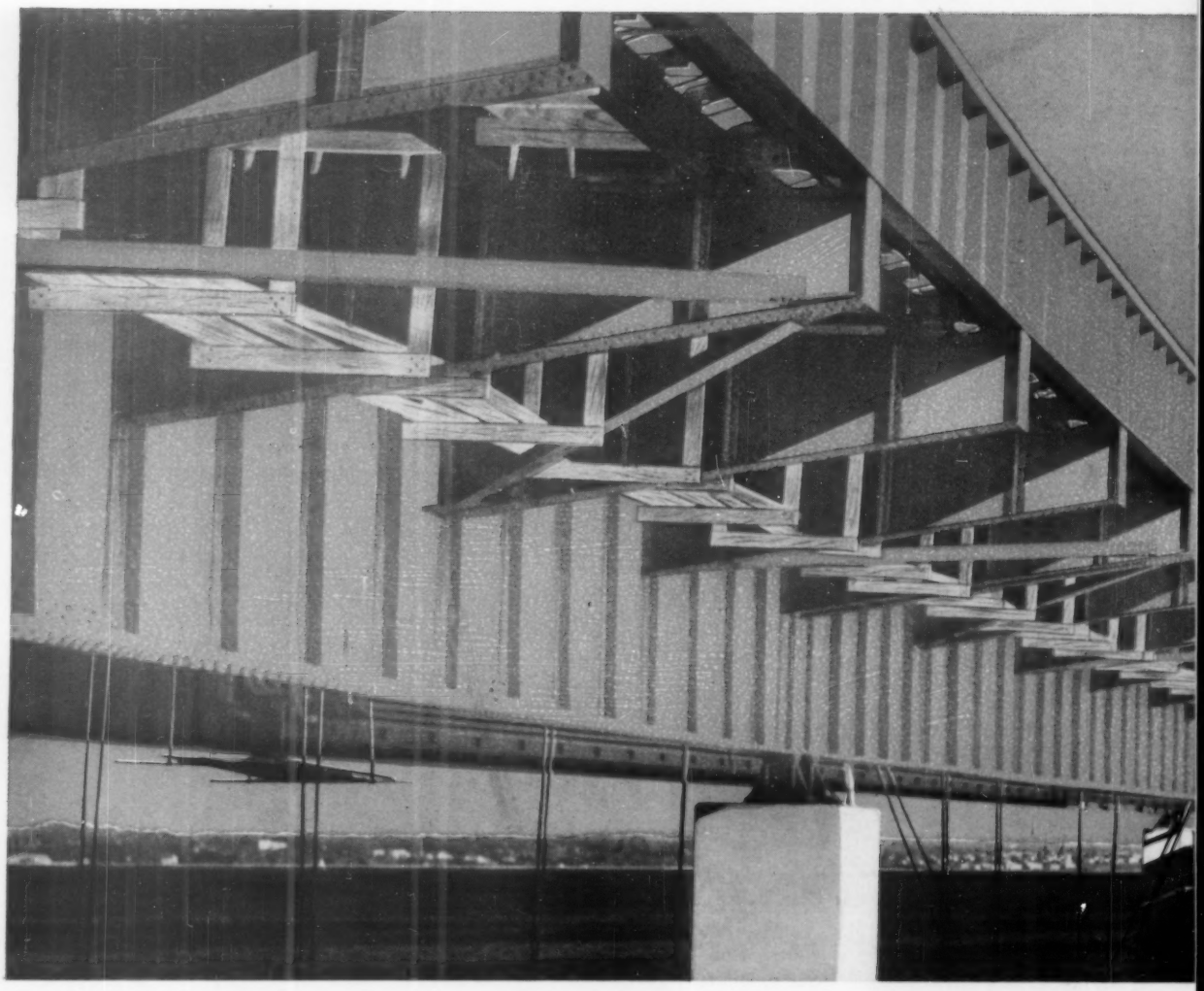


Closeup of operator with cover removed shows clean assembly of differential gearing and limit switches

BALDWIN · LIMA · HAMILTON

Pelton Division · San Francisco, Calif.

Hydraulic turbines • Valves • Governors • Centrifugal pumps



BRONX APPROACH TO THROGS NECK BRIDGE

Weather resistance of basic lead boosts protection of steel

M50® basic lead silico chromate pigment makes this long-lasting protection possible.

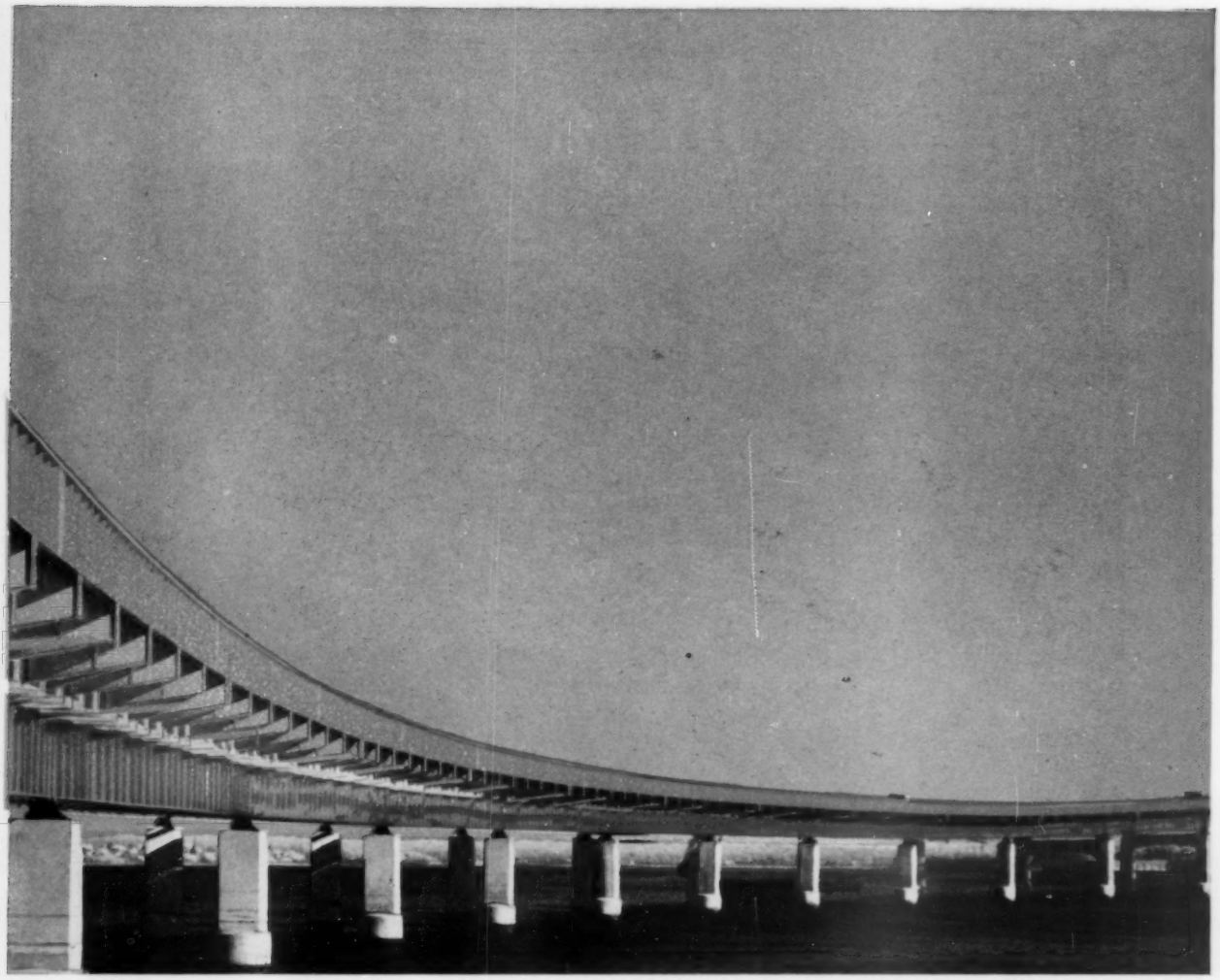
12,955 tons of steel are going into the Bronx approach to Throgs Neck Bridge . . . now being constructed for New York's Triborough Bridge and Tunnel Authority.

To prevent construction delays, steel was stock-piled at both shop and job well in advance. For this reason, and because of the erection schedule, it was anticipated that some of the steel would be exposed to weather for a year or more before final painting.

Full protection against rust during this long period might have been obtained by requiring repriming of the steel in the field. But it was easier, surer and less costly to specify, instead, a shop primer which contains basic lead silico chromate pigment.

Unlike any other rust inhibitor, basic lead silico chromate pigment combines corrosion inhibition of a high order with enduring resistance to weather.

The pigment contributes both properties to paint made with it. In exposure tests at National Lead Companies Test Station at Sayville, L. I., *M50* alkyd primers



More than a year of weathering in the field and during construction had to be anticipated before the *M50* maroon intermediate coat could be applied. Despite long exposure an *M50* shop primer does not chalk or leach away. With both the primer and the intermediate coat containing the active rust inhibitor pigment, basic lead silico chromate, this steel will be defended *in depth* against corrosion. Both coats will continue to provide full anti-corrosive action for years to come.

silico chromate shop primer during long exposure

3 mils thick have endured ten years of weathering with no finish coats to protect them.

In similar tests, finish coats were applied in a wide variety of colors on bare steel. These coats have given primer-type protection against rust formation.

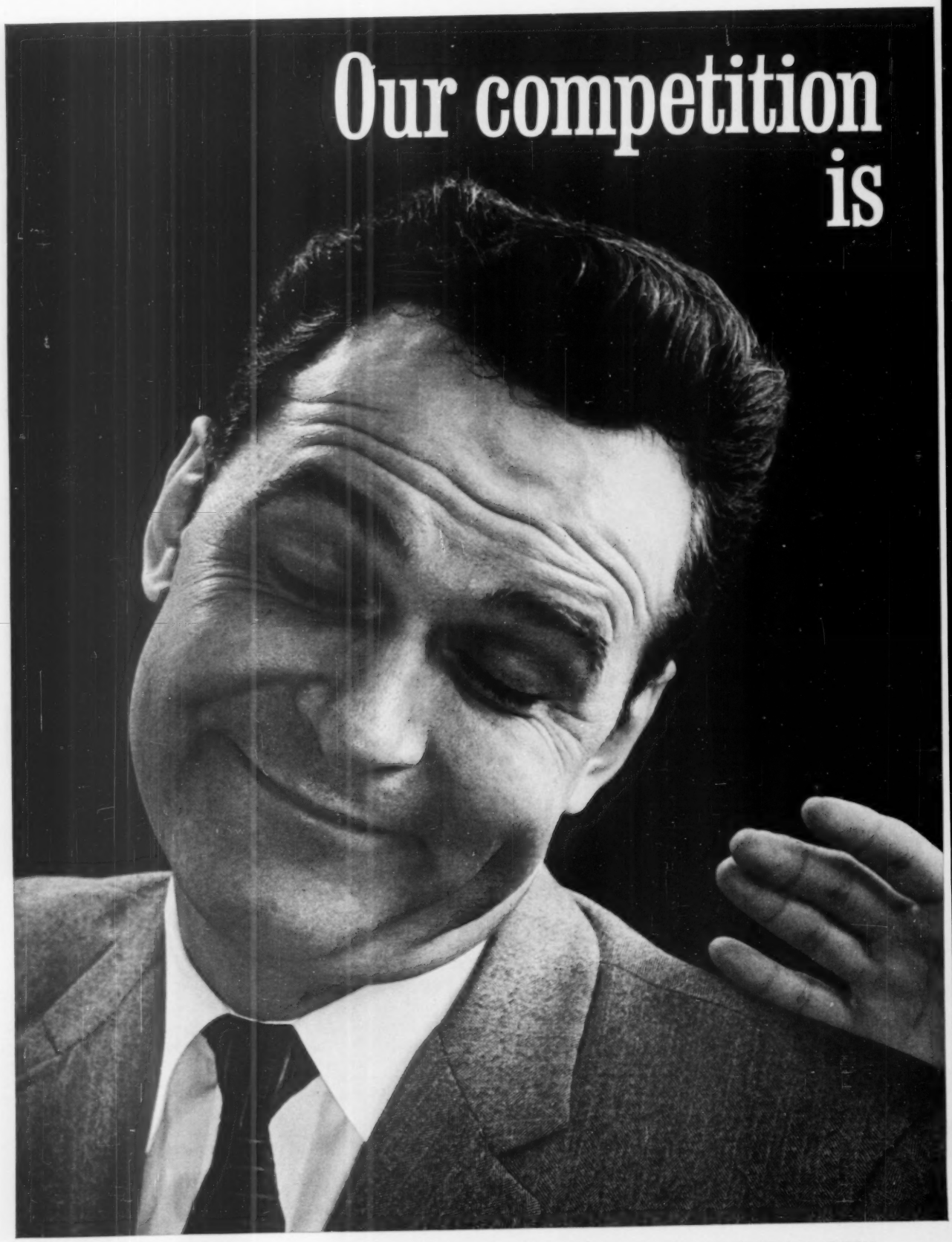
So, for the first time, in addition to the primer all following coats of the paint system can contain an active rust inhibitor to provide "Defense-in-Depth" against corrosion.

For information...

For details about these modern anti-corrosion paints and paint systems formulated with *M50* basic lead silico chromate pigment, contact your regular paint suppliers.

M50® an oncor® *Pigment...A Development of* National Lead Company

General Offices: 111 Broadway, New York 6, N.Y.


Our competition
is

The greatest compliment an advertiser can receive is when his competitors imitate his campaign.

That's why we at the Cast Iron Pipe Research Association feel so proud.

For 30 years we have been telling the public about the water problem.

We were the first to come out with consumer national advertising on this problem.

We were the first to inform the people of the need for action at the community level.

We were the first to furnish materials for local advertising programs.

We were the first to offer a comprehensive community relations plan with all necessary materials.

We were the first to issue a guide-to-action booklet which would serve as a step-by-step manual for responsible citizens.

We have been fighting the nation's water problem for over a generation.

And now other pipe companies are coming out with water campaigns, too.

Thank you, competition.

We're flattered.

CAST IRON PIPE

THE MARK OF THE 100-YEAR PIPE

CAST IRON PIPE RESEARCH ASSOCIATION,
Thos. F. Wolfe, Managing Director,
3440 Prudential Plaza, Chicago 1, Illinois

MONEY SAVING *catalogs*

Write to address given or circle corresponding number on free post card on page 55.

Valves for Filtration Plant Service

187 Current catalog literature available from DARLING VALVE & MFG. CO., WILLIAMSPORT 10, PA., will bring you up to date on that company's line of butterfly valves (16" and 24") and gate valves (6", 16" and 24") with revolving double disc parallel seats that assure positive sealing and ease of operation.

Two-Rate Rectifiers for Charging Stand-by Batteries

188 A new group of two-rate rectifier chargers has been developed by EXIDE INDUSTRIAL DIVISION, THE ELECTRIC STORAGE BATTERY CO., RISING SUN AND ADAMS AVE., PHILADELPHIA 20, PA. These Hi-Lo chargers can be used with 6- to 60-cell batteries, such as those that supply stand-by or intermittent power for emergency lighting, traffic control, fire alarm and police telegraph systems.

Sewer Cleaning Equipment

189 Tools and methods to meet all sewer maintenance and emergency problems are to be found in illustrated 48-page *Catalog* 59-A, which includes working instructions and on-the-job photos. For a copy, write FLEXIBLE INC., 3786 DURANGO AVE., LOS ANGELES 34, CALIF.

Latest Traffic Controllers

190 A complete new line of vehicle-actuated traffic control equipment featuring semi-vehicle-actuated and fully-actuated controllers is offered by CROUSE-HINDS CO., SYRACUSE 1, N. Y. Designed to provide flexibility, each basic controller is wired to accommodate a variety of accessory units, to keep pace with changing traffic control needs.

For Better Ice Control

191 Latest literature from HIGHWAY EQUIPMENT CO., 637B "D" AVE. N.W., CEDAR RAPIDS, IA., describes and gives specifications for the Hi-Way Model E spreader, a truck-mounted unit that assures fast, one-man operation, fewer reloads, better traction, and permits 4- to 40-foot spreads of sand, salt or cinders.

Brush Chipper Facts

192 Here's a brush chipper that tests show to be the fastest chipper. It accepts bulk up to 6 inches in diameter, is low in maintenance, easy to tow and safe to use. Full facts can be obtained from ASPLUNDH CHIPPER CO., 501 YORK RD., JENKINTOWN, PA.

Fire Equipment Catalog

193 W. S. DARLEY & CO., CHICAGO 12, ILL., announces the availability of its new 128-page catalog on fire equipment. When requesting a copy, specify your title.

Heavy-Duty Power Units

194 All engines described in *Bulletin* 1507-G have municipal applications. All are diesels, normal or turbo-charged, ranging in horsepower from 12 to 1200. For a copy of the bulletin, write WAUKESHA MOTOR CO., WAUKESHA, WIS.

Valve Operator for Filter, Water, Sewage Plants

195 Subject of current literature from the PELTON DIVISION (B-L-H), 2929 NINETEENTH ST., SAN FRANCISCO 10, CALIF., is the Pelton valve operator, which may be used with a variety of valve types and is adaptable to a completely automated system as well as a simple push-button control.

Two New Tandem Rollers

196 BUFFALO-SPRINGFIELD CO., 1210 KENTON ST., SPRINGFIELD, OHIO, announces the addition of two new models to its line of road rollers and compaction equipment. Both 8-12 ton Model KT24E and 10-14 ton Model KT25E are deluxe tandem rollers, said to combine job-tested features of the company's heavy-duty tandems with the economy of the standard models.

Advance in Sewer Line Maintenance

197 ND-25 sewer solvent unclogs sewer lines, dissolves grease, roots and cellulose and can be applied at manholes. It is colored to permit tracing its effectiveness throughout the entire sewer line system. For detailed literature, write NATIONAL CHEMSEARCH CORP., 2417 COMMERCE, DALLAS, TEXAS.

Rotary Distributors for Trickling Filters

198 *Bulletin* No. 23-S-97, just released by WALKER PROCESS EQUIPMENT, INC., 840 N. RUSSELL AVE., AURORA, ILL., describes ROTOSEAL rotary distributors. Design details are given on Mast type units and on the new Turntable type ball-bearing base unit. Also included are design data on rotary distributor selection, dosing chambers, recirculation and filter construction.

1 *First Compaction Trailer—Introduced by PAK-MOR in 1952*

2 *Introduced early 1955—Larger Trailer for Container Systems*

3 *July 1955—PAK-MOR Trailer for Transfer and Long-Haul Operations*

4 *PAK-MOR's Lo Boye arrived in 1958—Cut heavy route and medium haul costs*

5 *Handy Dump answered bulky, heavy brush and palm frond pickup problems*

6 *Handy Dump modified for combination container and route pickup service*

7 *PAK-MORs have served the Armed Forces for years across the nation*

SALVATION FOR THE NATION

PAK-MOR MANUFACTURING COMPANY

PAK-MOR Trailers have pioneered the rough road of how to cut operating costs. Refuse Collection and Disposal Problems are manifold — and so require many different answers — PAK-MOR shall continually strive toward producing equipment to do a better job!

Aluminum Structures for Picnic and Park Areas

199 ALUMINUM COMPANY OF AMERICA, 720 ALCOA BLDG., PITTSBURGH 19, PA., has prepared a 4-page folder on its group of versatile, easy-to-erect, maintenance-free aluminum structures, which include rest stations and picnic shelters for park and roadside areas, and utility buildings.

Area Mosquito Control

200 Detailed information on this subject is available from AMERICAN CYANAMID CO., AGRICULTURAL DIVISION, NEW YORK 20, N. Y., maker of technical malathion, which can be applied by air, thermal fogging or mist spraying. When used with Lethane, it is said to give 30% better kills than presently-used insecticides and to control resistant strains.

Heavy-Duty Diesel Engines

201 In this 16-page illustrated brochure, the ENGINE DIVISION OF CATERPILLAR TRACTOR CO., BOX 1108, PEORIA, ILL., relates the story behind its complete line of diesel engines. Design, component parts, applications, controls, accessibility are discussed.

Ford Tractors, Equipment for Construction

202 This is the title of a new 16-page booklet that shows Ford loaders, backhoes, dozers, excavators, fork lifts, cranes, etc., in use with Ford tractors. Applications described include excavating; loading; scraping, leveling and grading; and lifting, towing and general utility. Write INDUSTRIAL TRACTOR AND EQUIPMENT SALES DEPT., TRACTOR AND IMPLEMENT DIV., FORD MOTOR CO., 2500 E. MAPLE RD., BIRMINGHAM, MICH.

Engines for Sewage Treatment Plants

203 Engine bulletins available from CLIMAX ENGINE MANUFACTURING CO., DIVISION OF WAUKESHA MOTOR CO., CLINTON, IA., describe seven rugged Climax engine models for sewage treatment plants. These units burn sludge gas, or can operate on natural gas, butane, gasoline or any combination. Horsepower range is from 100 to 500 hp.

High-Speed Snow Plow

204 Latest addition to the Wausau line of snow plows is the Expressway, a high-speed power reversible blade plow of unusual design that's geared to meet the demands of expressway, toll road and airport plowing. For descriptive literature, and information on the full Wausau complement of snow removal equipment, write WAUSAU IRON WORKS, WAUSAU, WIS.

Saves $13,760 a Month

205 . . . handles 10% greater volume with half the number of trucks and men, is 110% more efficient, won 3 municipal contracts in 2 years. This is the record of 32 powerful, self-packing Hydro E-Z Pack refuse collection units in Santa Ana, Calif. For full story, write HYDRO E-Z PACK DIVISION OF HERCULES GALION PRODUCTS, INC., GALION, OHIO.

Transistorized Pipe Detector

206 *File* No. AC-7 gives complete information on the new Model "808" pipe detector, which is effective in varying temperature conditions and is the first unit with a circuitry developed specifically for use with transistors. It is available from COMPUTER-MEASUREMENTS CO., UTILITIES INSTRUMENTS DIV., 12970 BRADLEY, SYLMAR, CALIF.

Plunger Sludge Pumps

207 These pumps have capacities that range up to 500 gallons per minute with pressures up to 125 psi. They are designed for sewage treatment plants and have a wide range of applications. The complete line, available in several designs, is the subject of literature available from MARLOW PUMPS, DIVISION OF BELL & GOSSETT CO., MIDLAND PARK, N. J.

Vehicle Warning Lights

208 *Bulletin* 113A, which describes the Beacon Ray and Fire Ball, points out how these warning lights can keep your scrapers, dozers, trucks, line markers and other municipal maintenance vehicles from being accident prone. For a copy, write FEDERAL SIGN & SIGNAL CORP., 13556 S. WESTERN AVE., BLUE ISLAND, ILL.

1½-2 Ton Tandem Roller

209 This new roller, Model 220, has been designed to cut compaction costs and at the same time offer service-free performance with no greasing required. It is fully described in literature, available from ESSICK MANUFACTURING CO., 1950 SANTA FE AVE., LOS ANGELES 21, CALIF.

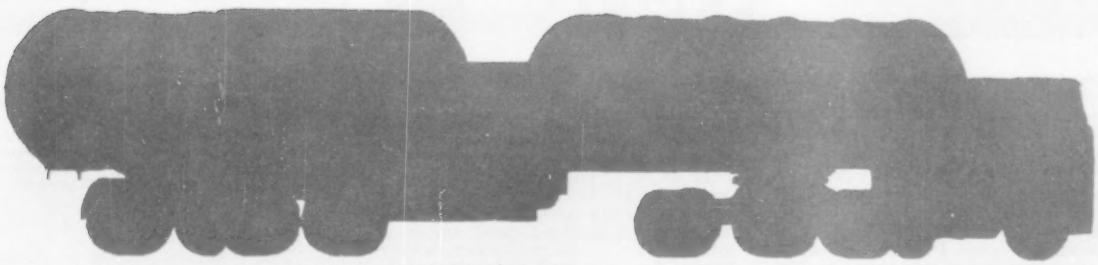
Electric Double-Cushioned Check Valve

210 This valve eliminates the hammer and shock in closing caused by the terrific surge of the common swing check valve, which is slammed shut by back flow as soon as the pump is shut down. How it does it is told in new, 8-page *Bulletin* W-10A, available from GOLDEN-ANDERSON VALVE SPECIALTY CO., 1232 RIDGE AVE., PITTSBURGH 33, PA.

(See page 78 for more Bulletins)

NOW!

A Revolutionary New Approach To Transfer and Disposal of Refuse! Bigger than anything NOW in operation. Designed and planned to make Bigger Savings A Reality! A Dynamic and Bold Departure so vitally necessary today to reduce higher operating costs. . . .



PAK-MOR's Newest Trailer will be unveiled in August

SEE This New PAK-MOR Trailer at the A.P.W.A. Conference at the New York Coliseum in August. Or, if you do not plan to attend—write today for complete details!

SANITATION FOR THE NATION

PAK-MOR

MANUFACTURING COMPANY

LOOP 13 & ROOSEVELT AVE. POST OFFICE BOX 14147
WA 3-4317 SAN ANTONIO, TEXAS

FREE catalogs

Write to address given or circle corresponding number on free post card on page 55.

Reflectorized Street Name Signs

211 Readable around the clock, durable, fadeproof and weatherproof, these street name signs combine the lifetime permanence of porcelain and glass with the extra strength of 18-gauge steel. For details and a complete street sign catalog, write CALIFORNIA METAL ENAMELING CO., 6904 E. SLAUSON AVE., LOS ANGELES 22, CALIF.

Engines in Action

212 This is the title of a new monthly publication which will tell the story of Kohler engines and their applications. Volume 1, No. 1 is light, readable and informative. It is available from KOHLER CO., KOHLER, WIS.

Supervisory Control for Water Systems

213 The Orthoplex system automatically controls remote pumping stations, control valves, elevated tanks and reservoirs. It can be installed to operate with most existing flow- and level-sensing devices without change. A single pair of wires can handle as many as 29 channels. For details, write SIMPLEX VALVE AND METER CO., a division of PFAUDLER PERMUTIT INC., LANCASTER, PA.

There's no second chance for engine-powered auxiliaries on fire-fighting equipment when life and property are at stake. The engine must start — and fast! And it has to be dependable now, tomorrow — and whenever needed.

That is why the auxiliary power unit for the famous "Snorkel" shown above is built around a 22-hp Model VF4 Wisconsin Engine. Proved and hailed by the Chicago fire department, the "Snorkel" — made by Pitman Mfg. Co., Grandview, Mo. — has a fast, safe eight-story reach for pin-point fire-fighting and saving victims.

The rugged Wisconsin was chosen because it is precision-fitted for smooth-firing power and minimum wear. And its basic high torque prevents stalling under sudden shock loads — a blessing in life-saving.

Trouble-free air cooling compounds the benefits. It provides all-weather dependability in temperatures from sub-zero to 140° F. It slashes upkeep because there's nothing to dry-up or freeze-up. You don't need water or anti-freeze — no radiators, water pumps, fan belts, and other water-cooling parts to buy, wear, or replace.

Whether you use engine-powered equipment for emergency services or to cut costs — specify Wisconsin Engines. Sizes from 3 to 56 hp. Electric starting available for all models. Get Bulletin S-251. Write Dept. U-10.

WISCONSIN MOTOR CORPORATION
MILWAUKEE 46, WISCONSIN
World's Largest Builders of Heavy-Duty Air-Cooled Engines

4-in-1 Grader

214 Literature describing the Allis-Chalmers Model D grader and its attachments points out its ability to handle utility loading, maintain shoulders in one safe pass, scarify tough, heavy-weight materials, and lift and roll loads. For a copy, write ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WIS.

Lightweight Protective Caps

215 These 8-ounce protective caps were designed by GENTEX CORP., 450 SEVENTH AVE., NEW YORK 1, N. Y., to protect municipal maintenance and service personnel from head injuries. They are made of polyethylene, resist impacts of more than 20-foot pounds, and are well ventilated. For details, request catalog literature.

Waste-Handling Pumps

216 *Bulletin* 2305 describes technically and from an applications standpoint 11 different types of pumping equipment for handling waste materials in all forms—liquids, slurries, gases, solids. It includes, also, a comprehensive selection guide, which correlates waste viscosity, corrosiveness, volatility, and solids characteristics with pump capacities, heads and design. For a copy, write YEOMANS BROTHERS CO., 1999 NORTH RUBY ST., MELROSE PARK, ILL.

Downs Trickling Filter Flies

217 GLENN CHEMICAL CO., INDUSTRIAL CHEMICALS DIVISION, CHICAGO 14, ILL., offers a 4-page illustrated folder and test reports on R.S.C., its insecticide formulation with new inhibitory factor for control of psychoda flies in trickling filters in sewage treatment plants.

Brush Disposal Machines and Methods

218 By writing to DEPT. AC-68, FITCHBURG ENGINEERING CORP., FITCHBURG, MASS., you can obtain information on a rugged, well-engineered machine that turns brush into easy-to-dispose-of chips, articles on 10 new ways to utilize chips, and 5 methods of brush disposal.

5½ Feet of Curb/Gutter per Minute

219 By writing to POWER-CURBERS, INC., P. O. BOX 1465, SALISBURY, N. C., you can obtain a 4-page illustrated bulletin that describes the Smith-Field automatic curb and gutter machine, which lays integral curb and gutter without forms and with a minimum of hand finishing.

Rotary Tractor-Mower

220 Latest literature from HAL-GAN PRODUCTS, INC., 13000 BLUE MOUND ROAD, MILWAUKEE 13, WIS., describes and gives specifications for the Spinaway Model 42, a rugged, versatile tractor-mower that's easy to maneuver and is powered by a 9.2-hp Wisconsin 4-cycle engine.

Insecticide Applicators

221 The flexibility, efficiency, features and advantages of Dyna-Fog insecticide applicators are described in a series of brochures available from CURTIS AUTOMOTIVE DEVICES, INC., P. O. BOX 297, WESTFIELD, IND.

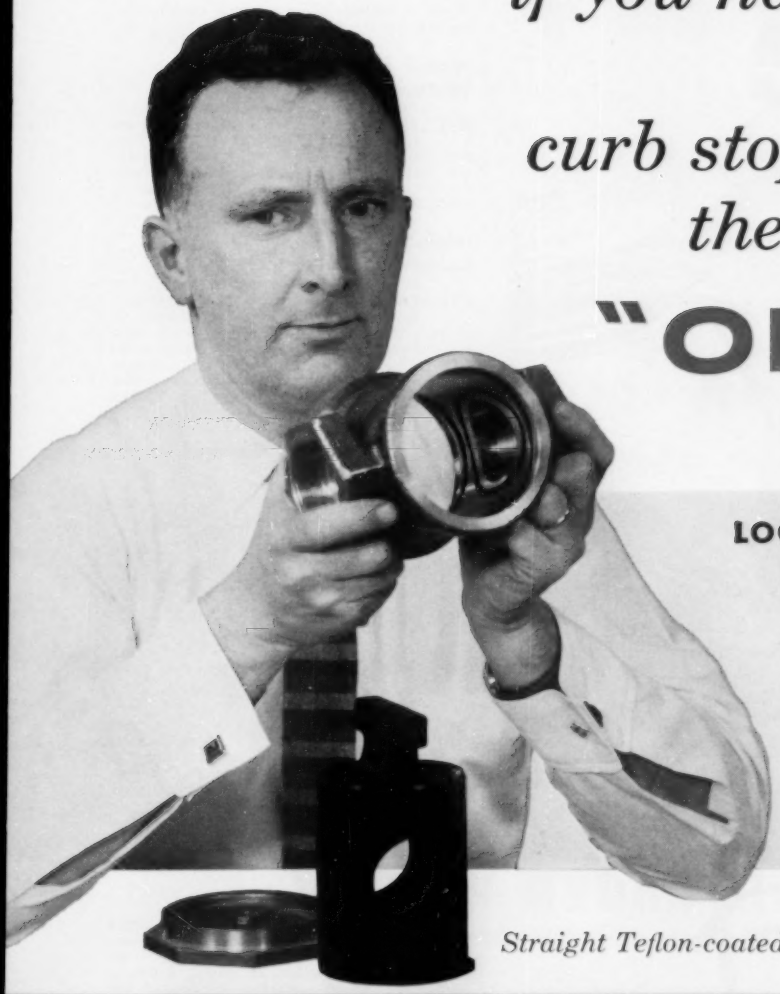
New Wheeled Tractor

222 New literature from J. I. CASE CO., RACINE, WIS., details the latest addition to that company's line of wheel tractors—the 57-hp (gasoline or diesel) Model W-3, primarily designed for use as a 2500-pound capacity loader and 3000-pound capacity backhoe.

(See page 80 for more Bulletins)

if you have problems with "sticking" curb stops, look into the new Mueller®

"ORISEAL®"



LOOK INTO THE IDEAL CURB VALVE

- *Investigate the easy turning design features*
- *Investigate the long-life operating dependability*
- *Investigate the many reasons behind its amazing performance record.*

Straight Teflon-coated plug . . . "O" rings in the body

■ Twelve years of intensive field testing have proved the big advantages in the Oriseal's simple, sturdy design. After 25,000 to 45,000 cycling operations, this curb valve remained leakproof, remained easy to turn and had required no periodic service maintenance of any kind.

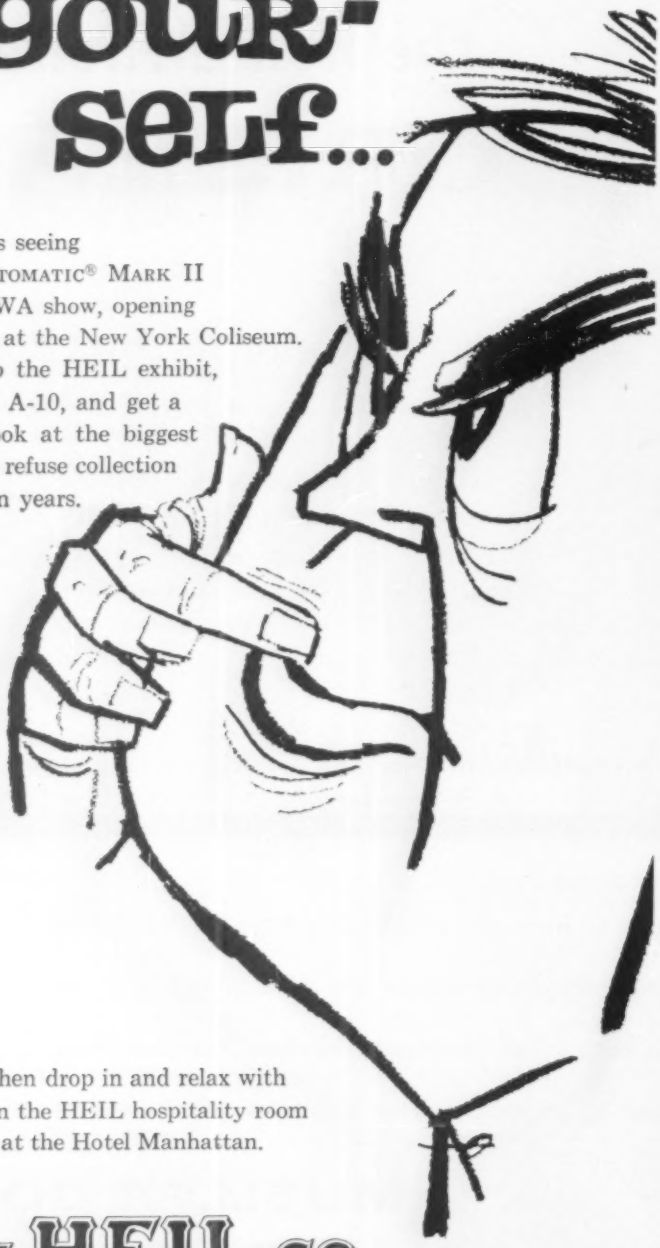
See your Mueller representative or write today for complete Oriseal test information. If you have experienced "sticking" curb stops, test an Oriseal Curb Valve in your water system and prove its many operating advantages.

MUELLER CO. Since 1857 SERVING the Water and Gas Industries QUALITY

MUELLER CO.,
DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles;
In Canada: Mueller, Limited, Sarnia, Ontario.

you'll hate yourself...



if you miss seeing
the COLECTOMATIC® MARK II
at the APWA show, opening
August 14 at the New York Coliseum.
Step up to the HEIL exhibit,
Booth No. A-10, and get a
close-up look at the biggest
advance in refuse collection
efficiency in years.

Then drop in and relax with
us in the HEIL hospitality room
at the Hotel Manhattan.

THE HEIL CO.

Milwaukee 1, Wisconsin

CATALOGS for Improved Municipal Services

Write to address given or circle corresponding number on free post card on page 55.

Water Meters of Sustained Accuracy

223 Perusal of the latest literature available from CALMET METER DIVISION, WORTHINGTON CORP., 2301 SOUTH MAIN, FORT WORTH, TEXAS, will bring you up to date on the entire Calmet water meter complement—models, sizes, construction features, applications.

High-Speed, Large-Area Mowing

224 Designed for center mounting on small utility tractors for high-speed, large-area mowing, the Model 62 rotary mower comes equipped with twin blades that cut a full 5-foot swath and with a special type of drive that is said to protect it against sudden shock loads. For descriptive literature write WOOD BROTHERS MFG. CO., OREGON, ILL.

Centralized Filter Control

225 In a new, 4-page bulletin, Ref. No. 0480.20-1, B-I-F INDUSTRIES, P. O. BOX 1342, PROVIDENCE 1, R. I., gives up-to-date information on the Builders-Providence Auto-Central Filter Control System. The detailed bulletin covers description and operation of the system, including its sequence protection and operational flexibility. A schematic diagram shows how the Auto-Central Control backwashes a filter.

Pneumatic Sewage Ejector Lift Station

226 New 6-page *Bulletin* 616A highlights design features and operational characteristics of the Du-O-Ject, a complete factory-built lift station for municipal and suburban sewerage systems that is used to raise sewage to a higher level or treatment facility and is specifically designed for lower capacities. Write SMITH & LOVELESS, DIVISION-UNION TANK CAR CO., P. O. BOX 8884, KANSAS CITY 15, MO.

7-Day Time Switch

227 A new 55-ampere, 7-day time switch handles the heaviest lighting loads and assures automatic control on schedule in the event of power failures. Individual on-off lighting schedules for each day of the week can be set on the 7-day dial. Further information is available from TORK TIME CONTROLS, INC., 1 GROVE ST., MOUNT VERNON, N. Y.

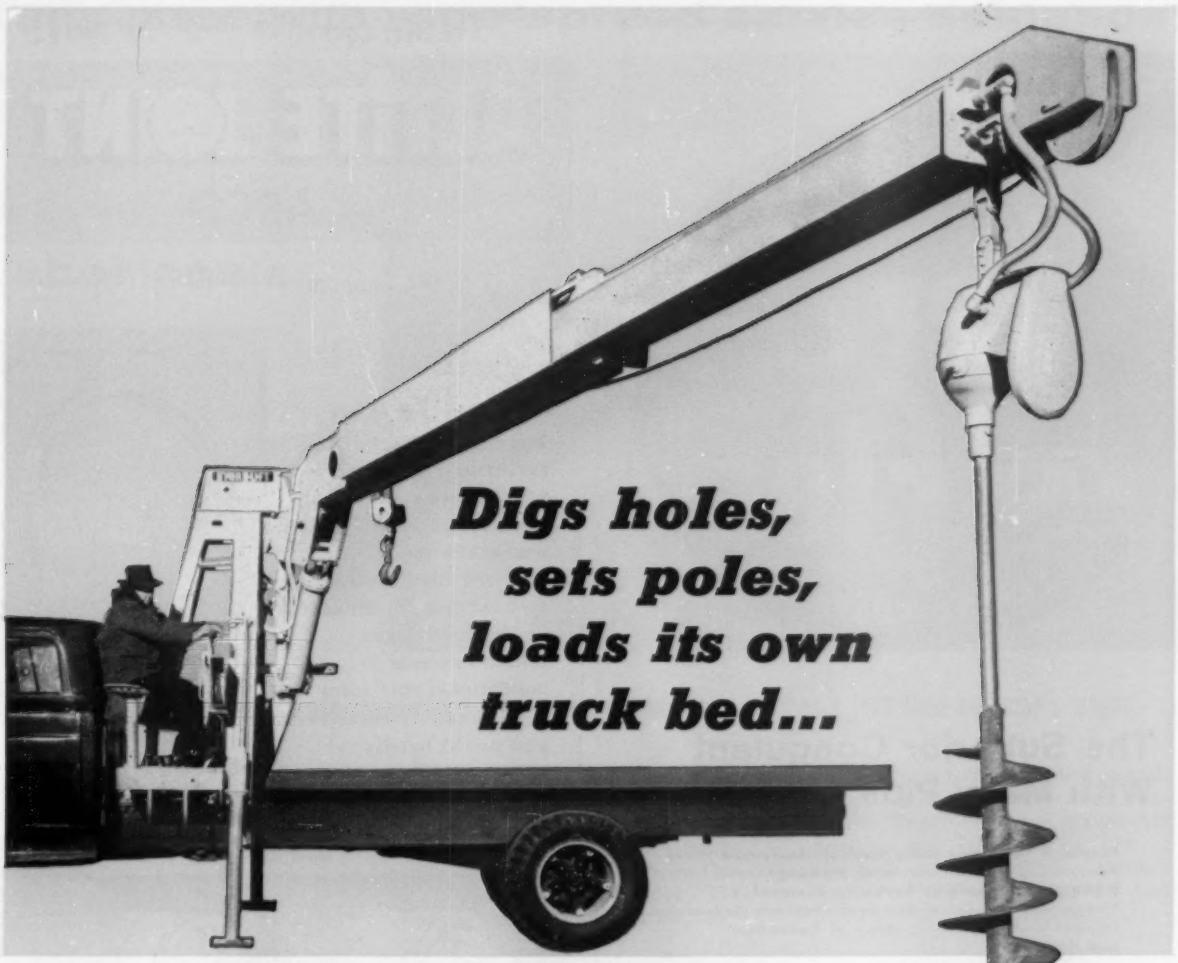
Rock Salt for Ice Control

228 When you specify Morton rock salt you can be certain of getting the quantity you need when you need it from a source near you. For details, write MORTON SALT CO., INDUSTRIAL DIVISION, 110 N. WACKER DRIVE, CHICAGO 5, ILL.

High Lift with Low Headroom Clearance

229 Construction features, operating characteristics and specifications of Yale Triplex masts, now available for use with 2000-3000 pound capacity versions of Yale Series GP-52 gasoline-powered, and K-46, K-47 and K-58 electric industrial lift trucks, are given in new 6-page *Bulletin* 2410A. Write ADVERTISING DEPT., THE YALE & TOWNE MFG. CO., YALE MATERIALS HANDLING DIV., 11000 ROOSEVELT BLVD., PHILADELPHIA 15, PA.

(See page 85 for more Bulletins)



PITMAN HYDRA-LIFT

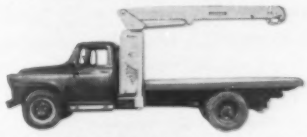
(model 60-HB with digger)

Spot your digger or lift heavy loads with this rotating, telescoping boom. Hydra-Lift lets you work easily in spots you couldn't get near with an A-frame or an ordinary crane. Simply pull to the edge of the road and set the self-locking A-type outriggers; lift, swing and extend the boom simultaneously, with inch-by-inch control. Completely hydraulic operation, including boom action and outrigger placement, with simple push-pull levers. Hydra-Lift loads its own truck bed, will handle 6,500 lbs. Boom extends to 27 feet. Pitman Model 60-HB installs easily on any 3-ton truck (or larger), or can be provided with your choice of trucks and utility line bodies. Either way, Hydra-Lift will be the busiest item in your fleet. Get full details by return mail!

PITMAN MANUFACTURING COMPANY

12778 Pitman Road • Grandview, Missouri

MODEL 60-HB HYDRA-LIFT, shown without digger attachment, ready to roll. Optional personnel platform attaches to boom-end, lifts two men as high as 42 feet.



MODEL 50 HYDRA-LIFT, with or without digger, rotates boom 360° in either direction. Unit takes only 24" behind cab, lifts 5,000 lbs., installs on any 1½-ton truck. Personnel platform optional.

ferri-floc

TC TENNESSEE CORPORATION

FERRIC SULFATE

The Superior Coagulant With Many Plus Features

Excellent Taste and Odor Control—Increased Filter Runs—Coagulation Over Wide pH Range—Rapid Floc Formation—Turbidity Removal—Manganese and Silical Removal—Bacteria Removal—Efficient and Economical—Ease of Operation and Handling.

WATER TREATMENT

Efficient Coagulation of Surface or Well Water—Effective in lime-soda ash softening—Adaptable in treatment of all industrial applications.

SEWAGE TREATMENT

Coagulates over wide pH range and provides efficient operation regardless of rapid variations of raw sewage—Very effective for conditioning sludge prior to vacuum filtration or drying on beds.

SODIUM SILICOFLUORIDE

For Fluoridation of Municipal Water Supplies—Available for prompt shipment—Inquiries invited.

For complete list of our products see our inserts in Chemical Week Buyers' Guide, Pages 173-176 or Chemical Materials Catalog, Pages 551-554.

For more detailed information make request on your firm's letterhead.

TC TENNESSEE CORPORATION

TENNESSEE CORPORATION

612-629 Grant Building, Atlanta 3, Georgia

For The Best Connection You'll Ever Make—

ALTITE JOINT®

By APCO

Efficient, Economical and Fool Proof—

Underwriters Approved

Patent Applied For.

The **ALTITE JOINT**® has been subjected to a series of rigid tests much more severe than are encountered under the most extreme installation and service conditions in the field. Even under extreme conditions, this joint is so simple to install—you could hardly go wrong if you tried.

For Efficiency, Economy and Simplicity—

Order ALTITE For Your Next Job

Insert Rubber gasket in bell end of pipe — you can't put it in wrong — A child can do it.

Wipe on a small amount of special lubricant—This reduces friction.

Insert plain beveled end of pipe — there are no grooves, ridges or tips on gasket to interfere with smooth insertion.

Small amount of pressure required to force plain end to bottom of socket—Your simple, time saving joint is completed.

ALABAMA PIPE COMPANY

General Offices—ANNISTON, ALABAMA

SALES OFFICES

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350 Fifth Ave., New York 1, N. Y.
905 1006 Grand Ave., Kansas City, Mo.
18505 W. Eight Mile Rd., Detroit 41, Mich.
5335 Southern Ave., South Gate, Calif.
2101 N. Webster St., Kokomo, Ind.

Keep pace with wide-spread service demands

...hold down labor costs

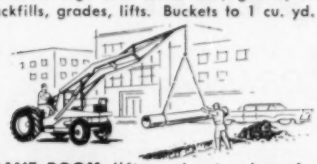
DIGGING • LIFTING

HANDLE WITH CASE *Utility*

LOADING • CARRYING

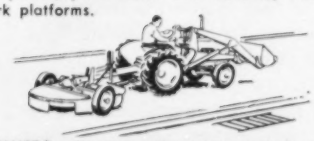
CASE 430 *Utility* Backhoe-Loader outworks a crew of hand laborers... yet costs less than one man's wages

LOADER digs and loads dirt, gravel, snow. Backfills, grades, lifts. Buckets to 1 cu. yd.



CRANE BOOM lifts and sets pipe, forms, boats, bulky articles of many kinds.

PALLET FORK moves construction materials, equipment, park tables and benches, waste, work platforms.



MOWERS, all types. Mows lawns, parkways, fairways, fields, berms and shoulders.

ALL-PURPOSE BLADE finish-grades, cuts ditches, sidewalks, grades streets.

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J. I. CASE CO., RACINE, WIS.

More and more communities are discovering that the easiest way to handle scattered maintenance jobs on a limited budget is to mechanize such operations with a low-cost Case 430 *Utility* Backhoe-Loader. This versatile one-man rig outworks a crew of hand laborers . . . yet it costs your budget actually *less* than one man's wages!

Big machine features at economy price

You'll find Case 430 Backhoe-Loader a high-output digger that's inexpensive to own, operate, and maintain. It travels anywhere, at speeds to 18 mph, to handle scattered assignments. Backhoe cuts trenches 10′ deep . . . reaches and digs 15′6″ from pivot . . . loads any size trucks . . . swings 180° with foot-pedal hydraulic control for fast cycling.

With both the 1000- or 1200-lb. capacity front-end loader you get exceptional power and stamina for fast, economical handling of dirt, gravel, refuse, snow, and other bulk materials. Tractor-loader maneuvers easily . . . gets full loads quickly . . . lifts half-a-ton to 10′5″ . . . dumps clean with 8′5″ clearance for fast dump-and-go. Quick-change attachments for loader give you lift-and-carry power for all kinds of materials and equipment (see illustrations). You can remove backhoe and be equipped to handle mowers, rear blade, or any of a wide assortment of labor-saving tools.

Free to public officials

To aid you in comparing specifications we have prepared a special file folder containing detailed specifications of all Case *Utility* wheel and crawler tractors and matched equipment. Clip and mail coupon for your free copy — today. Your Case *Utility* Dealer will also be glad to arrange a free demonstration and give you full details on Case financing and lease arrangements.

J. I. CASE COMPANY, Dept. H1560, RACINE, WISCONSIN

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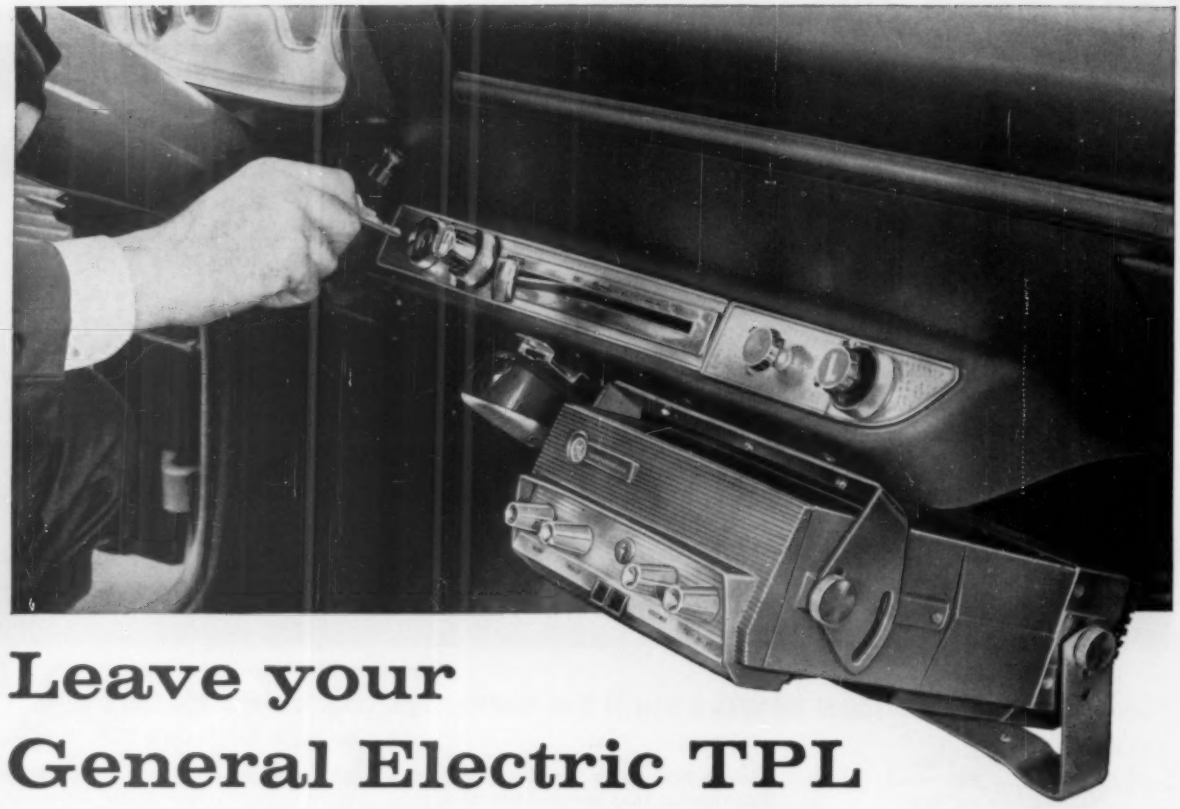


Leave your General Electric TPL 2-way radio on while your engine is off!

LOWEST BATTERY DRAIN AVAILABLE

Other makes of mobile radio drain your battery severely, even on standby. Unless you keep the engine running, this will inevitably shorten the life of your battery. And if you *do* run the engine while your vehicle is standing still, you're letting yourself in for a whole series of other problems—increased gas consumption, increased engine wear, special generators, etc.

Not so with TPL! Standby battery drain on General Electric's new Transistorized Progress Line is so low you need never turn off the TPL unit in your vehicle. By actual measurement, drain is less than 40 milliamperes, or only 1/25 of the current that runs your dome light. And even when the receiver is talking, drain is only 540 milliamperes.

With only four tubes in the TPL transmitter, you require no special generator, use less gas and need fewer engine jobs. The cost of operating your two-way radio system goes way, way down.

Get the full story on TPL—the smallest, most reliable two-way radio you can buy today. Write General Electric Company, Communication Products Dept., Section 1860, Mountain View Road, Lynchburg, Virginia.

GENERAL ELECTRIC

YOU NEED *These catalogs*

Write to address given or circle corresponding number on free post card on page 55.

Dig More Trench for Less Money

230 How? Literature from CHARLES MACHINE WORKS, INC., 603 BIRCH ST., PERRY, OKLA., will explain how Ditch Witch trench diggers enable you to produce at less cost more trench for utility services, gathering lines, signal lines, sewer laterals, sprinklers, street crossings and footings.

Cab-Controlled Snow Removal

231 Snow removal is accomplished with less effort, greater rapidity and more economy when snow plows are raised and lowered automatically from inside the cab. An illustrated folder on battery-operated and fan belt-driven hydraulic controls that assure dependable snow-plow action can be obtained from MONARCH ROAD MACHINERY CO., 1331 MICHIGAN ST. N.E., GRAND RAPIDS 3, MICH.

Refuse Collection Film

232 The versatility of the Roto-Pac refuse collection unit on both typical and unusual routes is pointed up in this color film. Also highlighted is the unit's container system, built to handle both manual and automatic loading of containers (from ½ to 6 yards) from dock or street level. To arrange for a showing, write CITY TANK CORP., 53-09 97TH PLACE, CORONA 68, N. Y.

Bores Through Earth Quickly

233 A new, high-power, high-torque air motor enables this horizontal earth-boring tool to rip through tough roots and earth formations to open hole for pipe installations or soil drainage. Full speed and torque are maintained right up to stalling point. For bulletin giving full facts, write HYDRAUGER CORP., LTD., 681 MARKET ST., SAN FRANCISCO 5, CALIF.

9 Motor Grader Models

234 Its expanded line of power graders, which feature all-wheel-drive, all-wheel-steering, range from 16,000 to 30,000 pounds and 102 hp to 165 hp, is subject of current literature offered by AUSTIN-WESTERN CONSTRUCTION EQUIPMENT DIV., BALDWIN-LIMA-HAMILTON, AURORA, ILL. Plow, roller, bulldozer and scarifier attachments are included.

Steam-Cleaning Equipment

235 Descriptive literature, available from MALSBARY MFG. CO., 845 92ND AVE., OAKLAND 3, CALIF., discusses that company's high-pressure combination steam cleaning system for cleaning street equipment, refuse trucks, sewage plants, etc., and for thawing hydrants, sewage lines, gutters, culverts and snow removal equipment.

Plastic Brush Filament for Mechanical Sweepers

236 A new polyolefin brush filament, called Wynene 18, is helping the Department of Public Works in Frederick, Md., make a clean sweep of all the city's streets. Bristles used on the city's mechanized sweeper roller are oval in shape, 26 inches in length, inert and moisture resistant, tough and durable. For details, write THE NATIONAL PLASTIC PRODUCTS CO., ODENTON, MD.

Tyton and Mechanical Joints

237 In this 8-page catalog, McWANE CAST IRON PIPE CO., BIRMINGHAM, ALA., discusses the advantages of using Tyton joint cast-iron pipe for water services and Mechanical joint for water and gas services. Particulars on pipe foot lengths and fittings are also given.

Speeds Leaf Collecting, Catch-Basin Cleaning

238 If you are interested in learning how you can collect leaves and debris from streets four times faster and clean catch basins four to 12 times faster, send for current literature on the Obeco. Write OMAHA BODY & EQUIPMENT CO., 30TH & TAYLOR, OMAHA 11, NEBR.

Free Water Intakes of Debris

239 Trash accumulations at water intakes creating a problem? An illustrated booklet offered by NEWPORT NEWS SHIPBUILDING AND DRY DOCK CO., NEWPORT NEWS, VA., might help. It describes the installation, operation and advantages of power-operated mechanical rakes designed to operate in channel guides for maximum cleaning of racks at water intakes. Request "The Newport News Mechanical Rack Rake."

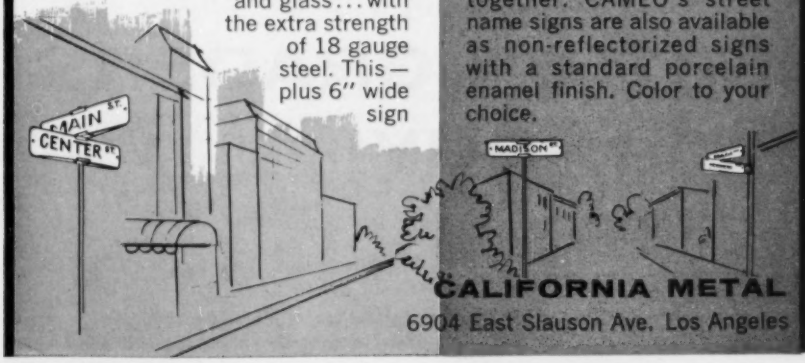
Spectator Seating

240 A new 42-page color catalog, available from WAYNE IRON WORKS, WAYNE, PA., describes the company's complete line of outdoor and gym seating equipment, folding partitions, basketball backstops, and new folding stage. The spiral-bound booklet is available free, upon request, to school administrators, architects and general contractors.

porce lite street signs—always

DAY OR NIGHT!

Only PORCELITE, an exclusive CAMEO process, provides porcelain enamel signs with easy readability by day or night. Porcelite Street Sign plates combine the lifetime permanence of porcelain and glass... with the extra strength of 18 gauge steel. This—plus 6" wide sign plates with 4" letters provide the nation's most readable and durable signs! Longer lasting! Weatherproof! Fade-proof! Vandal proof design, with all aluminum hardware and rivets, join both faces together. CAMEO's street name signs are also available as non-reflectorized signs with a standard porcelain enamel finish. Color to your choice.



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FINEST MOTOR GRADERS MONEY CAN BUY!

Now choose from 9 Austin-Western models to match weight and power needs for any job—16,000 to 30,000 lbs., 102 to 165 hp

Austin-Western motor graders are designed and built to do more different kinds of work faster, and more profitably for *you*, than any other grader of comparable weight and horsepower! We can prove this.

Available in 4-wheel Pacer or 6-wheel Super series. The A-W line features exclusive A-W all-wheel drive and all-wheel steering for unequalled power, precision and maneuverability.

Bulldozer, scarifier, V-plow and wing, reversible plow and roller attachments also available.

Get all the facts and figures on the Power Graders that pay big dividends day after day—year after year. See your Austin-Western distributor or write us.

Austin-Western CONSTRUCTION EQUIPMENT DIVISION, AURORA, ILL.

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Printed in U. S. A.

ARE YOU GIVING AWAY TONS OF WATER

...just to save a few cents?

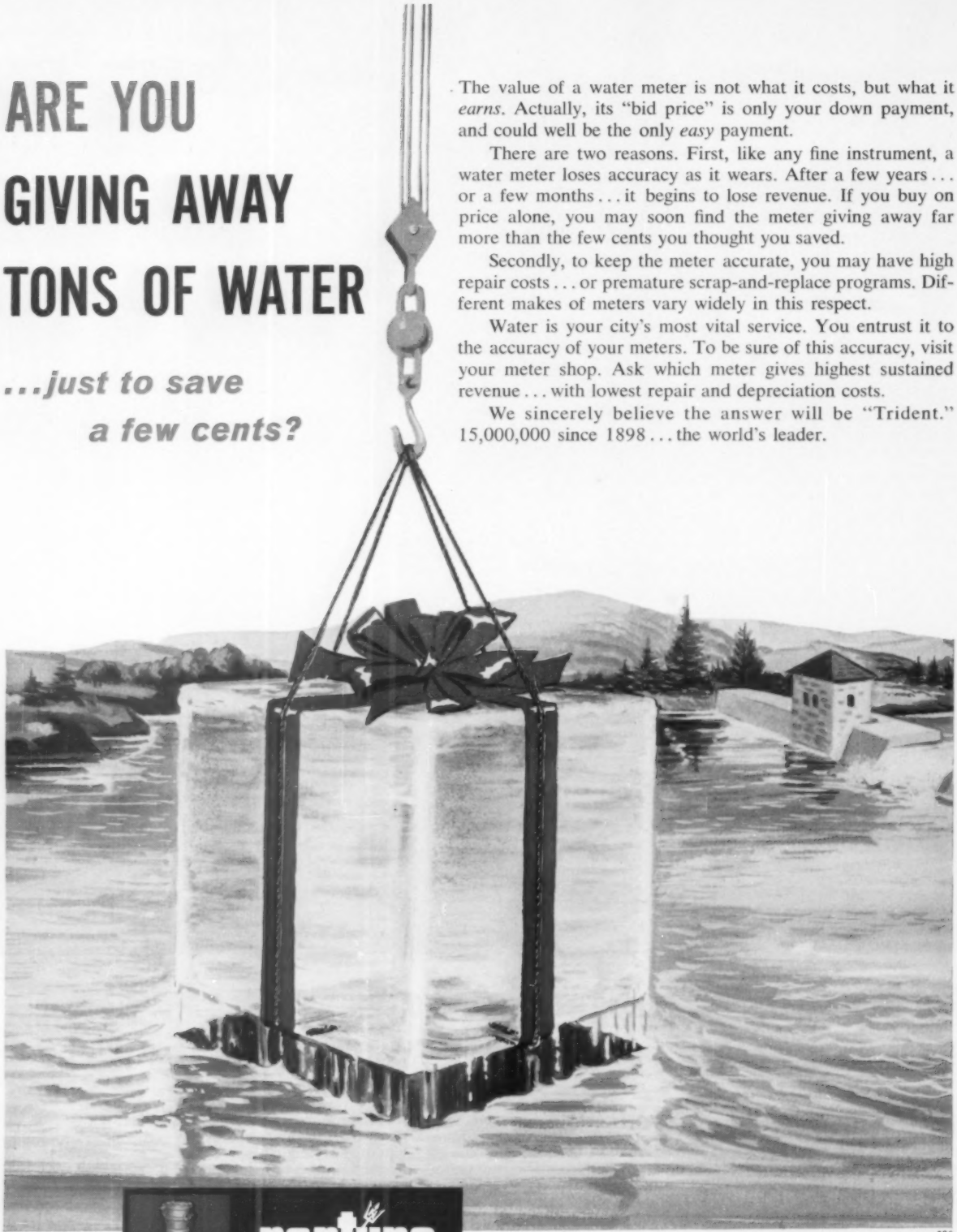
The value of a water meter is not what it costs, but what it *earns*. Actually, its "bid price" is only your down payment, and could well be the only *easy* payment.

There are two reasons. First, like any fine instrument, a water meter loses accuracy as it wears. After a few years... or a few months... it begins to lose revenue. If you buy on price alone, you may soon find the meter giving away far more than the few cents you thought you saved.

Secondly, to keep the meter accurate, you may have high repair costs... or premature scrap-and-replace programs. Different makes of meters vary widely in this respect.

Water is your city's most vital service. You entrust it to the accuracy of your meters. To be sure of this accuracy, visit your meter shop. Ask which meter gives highest sustained revenue... with lowest repair and depreciation costs.

We sincerely believe the answer will be "Trident." 15,000,000 since 1898... the world's leader.



neptune
TRIDENT WATER METERS

306

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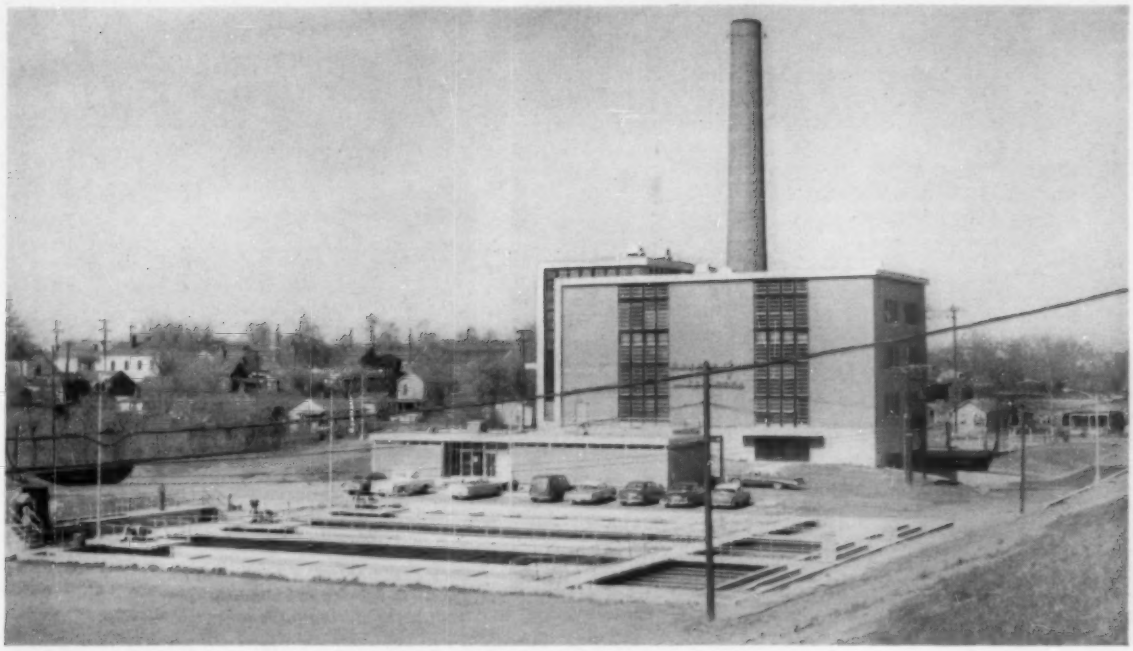
LIQUID METER DIVISION

47-25 34th St. Long Island City 1, N. Y. / Neptune Meters, Ltd., 1430 Lakeshore Rd., Toronto 14, Ont. / Offices in Principal Cities

AUGUST 1960

The American City



Utilization of one site for both plants permitted the use of waste heat from the incinerator to be used for sludge drying.

A Refuse-Sewage Treatment Works

New Albany teams its sewage treatment plant with its refuse incinerator to bring an extra benefit to the entire city

By MARION EDLIN
Superintendent of Sewage Treatment
New Albany, Ind.

Since New Albany needed a sewage treatment plant and a mixed refuse incinerator, the city officials and consulting engineers thought it best to locate both on the same site and combine plant functions where feasible. Consequently the two facilities are situated on a 1.8-acre site in the southwest portion of the city adjacent to the flood wall on the north bank of the Ohio River. The site is large enough to permit doubling the sewage treatment facilities.

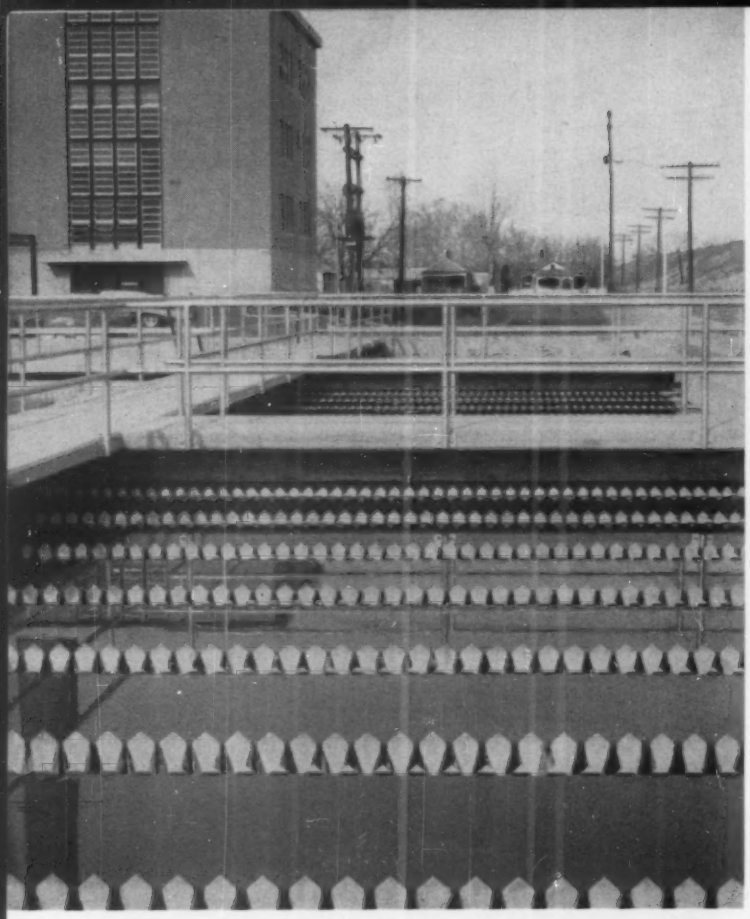
Our plant is of the primary type. Sludge treatment consists of vacuum filtration and flash drying with ultimate dry-sludge disposal by truck to a dump site, or incineration. We are presently investigating the possibility of selling this material to one or more of the nearby fertilizer manufacturers for use as filler.

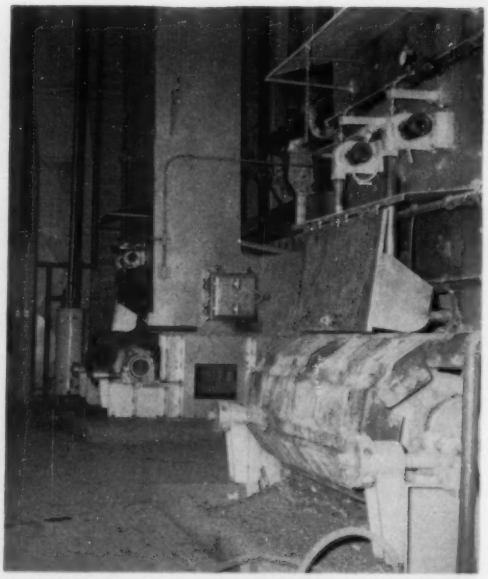
Consoer, Townsend & Associates, consulting engineers of Chicago, Ill., designed both plants and appurtenances and supervised construction. Bonds were issued to finance the program, which cost approximately $1,700,000.

Sewage Treatment

A 54-inch sewer and a 24-inch sewer conduct raw sewage to the raw sewage pump station located about 500 feet from the plant proper. The two sewers meet at a junction chamber which is connected to the screen chamber and wet well by a single conduit. Sewage flowing from the junction chamber to the wet well passes through a Link-Belt Thru-Cleen bar screen. The conduit is fitted with a Rodney Hunt sluice gate to permit closing off the channel and by-passing the plant by discharging the sewage into an adjacent creek which in turn flows into the Ohio River.

The pump station contains two





Two 80-ton-per-day traveling-grate incinerators dispose of the city's refuse and also burn unwanted dried sludge.

←

Each sedimentation tank contains eight longitudinal V-notch collection troughs at the outlet end.

pumps with provision for a third. There are Fairbanks, Morse units having capacities of 4,200 gpm at 37-foot head, powered by 100-hp motors. By means of a magnet drive and suitable controls, pump speed is automatically varied to match pumping capacity with the rate of sewage flow.

At the plant site, raw sewage passes through a 24-inch Chicago Pump Barminutor and a Parshall flume, fitted with a Builders-Providence indicating, recording and totalizing instrument, into the primary tanks.

The three identical tanks are each 31½ feet wide by 108 feet long with an average water depth of eight feet. Each tank contains two Jeffrey straight-line sludge collectors and one cross-collector mechanism. Sludge collected in the tank hoppers flows under hydrostatic head into a sludge well through an adjustable withdrawal valve.

The outlet end of each tank contains eight 18-foot-long longitudinal V-notched collection troughs having 100 V-notch weirs per trough. The troughs discharge into a concrete channel which is located at the end of the tank.

The total volume of the tanks is 81,600 cubic feet or 610,700 gallons. At average design flow of 6.13 mgd they provide 2.4 hours detention time at a settling rate of 600 gallons per square foot per day. Weir overflow rate amounts to 2,550 gallons per V-notch per day.

Plant discharge is to the Ohio River. For odor control purposes, the plant is equipped with chlorination facilities consisting of one 1,000 - pounds - a - day Wallace & Tiernan unit, a scale and a storage platform to hold up to 15 one-ton containers. Chlorine is applied just ahead of the barminutor.

Sludge Handling

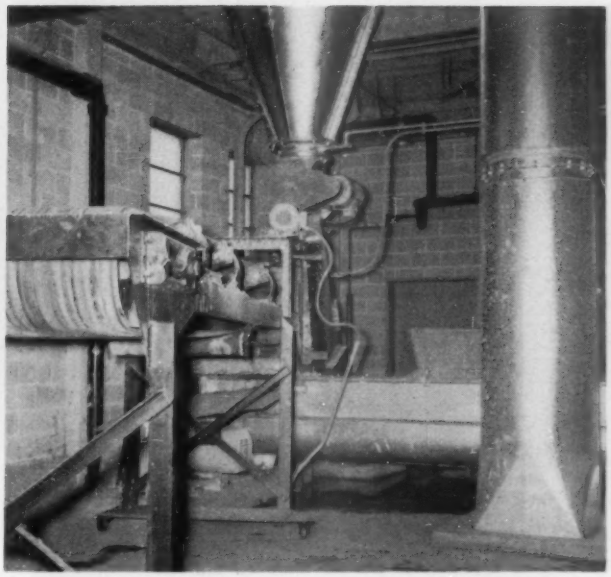
Raw sludge is pumped from the sludge well to two sludge holding tanks located adjacent to the incinerator building. These tanks permit sludge to be applied to the vacuum filters at a controlled rate. They have sufficient capacity to store raw sludge over weekends or during other periods when the filters may not be in operation.

During filtration, sludge is pumped from the holding tanks to the conditioning tanks which are located on the third floor of the incinerator building.

After the addition of ferric chloride and lime, the mixture flows by gravity to the two Komline-Sanderson vacuum filters. The filter cake which results contains about 70% moisture.

A continuous belt conveyor carries the sludge cake to the C-E Raymond flash-drying system. This system utilizes the hot gases from the mixed refuse incinerator to reduce the moisture content of the sludge to about 8%. The dried sludge is then conveyed to trucks by means of a loading chute or carried to the incinerators to be disposed of by burning.

Refuse incineration takes place in two 80-ton-per-day Combustion Engineering units. They have an effective grate area of 105 square feet and a burning capacity of 63½ pounds per hour per square foot of



The sludge is dehydrated to about 70% moisture content by vacuum filtration (above) and then dried in a flash-drying system utilizing waste heat from the mixed-refuse incinerator (right).

grate. Heat release is calculated at 276,000 BTU per hour per square foot of grate.

The furnace volume is 1,400 cubic feet for each unit with a secondary chamber volume amounting to 1,235 cubic feet.

The evaporator capacity of the flash dryer amounts to 4,300 pounds of water per hour from a filter cake having about 70% moisture content. Filter cake capacity is 6,460 pounds per hour.

Refuse

Incoming refuse is discharged into a receiving pit 16 feet by 44 feet in area and 19 feet deep. Three trucks can discharge their loads simultaneously. A three-ton P&H crane transfers the refuse from the storage pit to the furnace charging hoppers.

The gases are discharged through a single stack having an internal diameter of 7½ feet at the top and a height of 150 feet. Stack sprays control fly ash.

In addition to the main raw sewage pump station, four lift stations are located throughout the city. Two are Smith & Loveless package-type ejector stations; one Way-O-Matic rated at 75 gpm at 80-foot head and one Du-O-Ject rated at 100 gpm at 20-foot head.

A third ejector type station contains two Komline-Sanderson ejectors each rated at 400 gpm against a head of 104 feet.

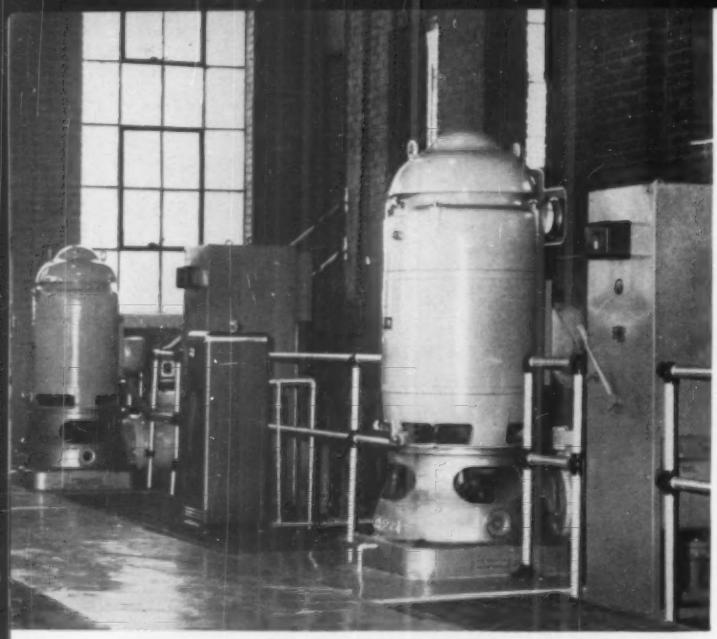
The fourth station contains a Chicago Pump Company Flush-Kleen unit with two pumps rated at 550 gpm at a head of 68 feet.

Design of the sewage treatment facilities is based on an expected 1980 population of 51,100 persons and an average flow of 6.13 mgd. Our present population is approximately 42,000 persons, but the existing sewer system serves only 26,000. Recently annexed areas not served at present will be included in currently proposed sewerage improvements.

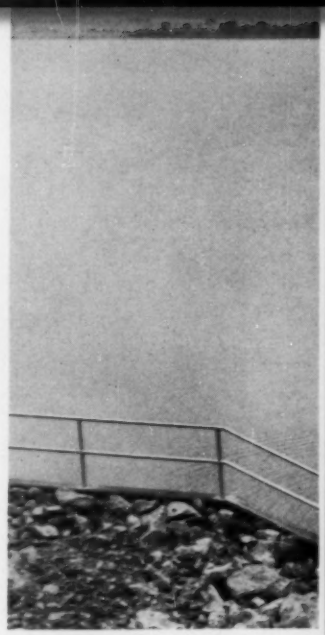
Twelve men, including the superintendent, presently operate the sewage treatment plant and incinerator. The incinerator with one unit burning operates nine hours per day, five days per week while the sewage plant operates continuously, with one man working the second and third shifts and on Sundays.

Construction of both facilities was under the administration of Mayor C. Pralle Erni. The writer is directly responsible for the operation and maintenance of both plants. ◄◄

Chlorine-handling facilities in the rear of the administration building allow for storage of 15-ton containers.



These two high-service pumps replaced old steam equipment during a remodeling program carried out in 1954.



A new dam and reservoir on Labette Creek increased Parson's water supply by 10,000 acre-feet.

Base-Bid Specifications

. . . bring substantial water-works savings to Parsons, Kan.

By **PAUL FREEBERG***
City Engineer

It is difficult to put an actual dollar value on our savings in Parsons, Kan. Nevertheless, by using what is called a base-bid specification for equipment, and breaking down the work on our new reservoir, we have received substantially lower prices.

For example, construction of the reservoir cost us about $100,000 less than the engineers' estimates. As for the treatment plant, we know that not only the contractors, but the city too has saved by using approved alternates on equipment bids.

In the base-bid specification, the equipment to be supplied is listed with the builder's name, make, and model, and on this the contractor submits his bid. The specifications are not closed; if the contractor wishes to propose alternate items, he may do so by listing these in the spaces provided. He must, however, include a full description of the units and technical data together with the amount of money to be added to or deducted from the base bid if the alternative is accepted.

The contractor is responsible for all changes of design, fitting, installation, connection and method of operation caused by the use of accepted alternate items of equipment. By this means we hope to have the most suitable equipment together with any savings that might accrue.

City Benefits

We know that a contractor will bid on one certain item and, if another can be substituted at a savings, he doesn't hesitate to do so and pocket the difference. Although there is nothing basically wrong with this practice, we feel the city too should benefit from such savings. The base bid excludes no one; however, we do have control over what piece of equipment is used.

Our program got off to a good start when in February 1957 the citizens of Parsons approved a $1,300,000 bond issue by a six-to-one margin. We divided the improvements into four different projects: mains, overhead storage tank, water treatment plant, and Labette Creek Reservoir.

In December 1955, Wilson & Company, consulting engineers of Salina, Kan., made a comprehensive survey of our distribution system. Following their recommendations, our municipal water-works crew installed 800 feet of four-inch, 2,100 feet of six-inch, 2,500 feet of eight-inch and 2,600 feet of 14-inch cast-iron pipe. The 14-inch line is a new feeder main to the new elevated tank. This work was completed in 1958 but this past fall we installed 3,000 feet of 10-inch main to serve the industrial area, bringing the total length to slightly over two miles.

In July 1958, our new 500,000-gallon elevated tank went into service. It is a Horton Water Spheroid erected by the Chicago Bridge & Iron Company at a cost of $109,000. The Freeto Construction Company of Pittsburg, Kan., did the foundation work at a cost of $12,000 and our own crew installed the piping

* As City Engineer, Mr. Freeberg has direct supervision of the Engineering Department, Street Department, and Water and Sewerage Departments. Prior to accepting this position in 1957 he spent eight years with the State Highway Commission of Kansas.

The five existing filters have sufficient capacity for the present and the foreseeable future. Each is rated at 1 mgd.

and altitude valve. A Builders-Providence telemetering system records the water level at all times, enabling the pumping station personnel to know exactly how much water is in the tank at any given time.

For supply we can draw from a storage reservoir on the Neosho River or from Labette Creek. The Neosho reservoir, with a 3.5-mgd capacity pumping station, is used as a standby; our daily supply comes from Labette Creek. To improve our supply we constructed a new dam and reservoir. The dam impounds 970 surface acres of water with an average depth of 10½ feet. The total capacity is 10,000 acre-feet and maximum depth 24 feet (not measured in channel). For the reservoir, we purchased 2,207 acres at a cost of $314,708 and we also acquired easement on an additional 204 acres.

The Dam

The dam is just over a mile long and is 240 feet wide at the base. It has a 3:1 slope on the front and a 2:1 slope on the downstream side. The top is 16 feet wide. A clay core, 12 feet wide by 3,500 feet long, embedded two feet into shale, seals off the water. The front face is riprapped with rocks, 60% of which weigh over 100 pounds, and the back side is sprigged with Bermuda grass.

The outlet works consists of a 4x5-foot concrete tower with two inlet pipes, 21 and 24 inches in diameter, respectively, and a 24-inch outlet pipe. The outlet pipe lies in and utilizes the existing channel, thereby conveying the water by gravity, without the need or expense of pumping.

The water flows to an existing 30,000,000-gallon reservoir at the treatment plant. Here it is picked up by low-service pumps in our existing 5-mgd pumping station and delivered to the plant.

Of about 80 sets of plans sent out, 15 were returned with bids. We broke the job down into four parts: clearing, dam construction, fencing, and seeding. This proved very successful as shown by the comparison of bids and the engineer's estimate in the table on page 94. Dividing the work also gave smaller contractors an opportunity to bid.

Plant Improved

The improvement to our existing purification plant is designed to serve a population of 17,500 persons, based on an average daily use of 190 gallons per capita per day (gpcpd), or 3.33 mgd, and a maximum day of 380 gpcpd, or 6.66 mgd. The sequence of treatment is as follows:

1. Low-service pumping—existing

2. Addition of chemicals: lime, alum, activated silica, activated car-

The renovation of the chemical-feed system included new machines and placing raw materials on the floor above the feeders.

bon, chlorine (storage and chemical-feed facilities remodeled)
3. Flash mixing—new
4. Flocculation—new
5. Settling—new
6. Filtration—existing
7. Chlorination—existing
8. Clearwell—existing
9. High-service pumping—existing

Chemical Facilities

Conversion from steam to electric power in 1954 provided more room for chemical storage and renovation of the chemical feed system. The machines are located on the second floor and chemicals stored on the third floor. Our new chemical-feed machines consist of B-I-F Industries equipment for alum, lime and carbon and of Wallace & Tiernan units for the chlorine and silica.

Raw water is metered just before it enters the flash mixer. Mixing of the water and chemicals takes place in a concrete tank seven feet square with 7½-foot water depth, equipped with a vertical mixer. Detention time is two minutes at minimum flow and 36 seconds at 3.33 mgd.

The two new flocculation tanks are each 26 feet by 29 feet in size with a side water depth of 13 feet. Flow is introduced through ports in the inlet flume and discharges at the bottom of the basins at the outlet end. The variable flocculators provide tapered mixing in baffled sections. The detention time is 32 minutes at 3.33 mgd.

Operation of the old and new settling basins in series provide somewhat more than nine hours settling time. The new basin, consisting of two tanks equipped with horizontal sludge collectors and cross collectors, is 41 feet wide, 88 feet long, and has a 13-foot side water depth. It provides 2 hours and 32 minutes detention time at an overflow rate of 925 gallons per square foot of exposed water surface per day. Weir loading at this flow amounts to 8,600 gallons per lineal foot per day at our plant design rate of 3.33 mgd. The existing basin, with its 2,000,000-gallon capacity, adds another 7.2 hours of settling time. The rapid-mix flocculation and sedimentation units utilize Link Belt equipment.

Chlorinators

A new 400-pound-per-day chlorinator was installed, with space provided for a second machine, for prechlorination. Application is at the flash mixer. An existing 200-pound - per - day machine handles post-chlorination, with the chemical added to the water just ahead of the filters.

We have five filters, each rated at 1 mgd. No work was done to the filters under this project.

We made no changes to the clearwell (capacity 170,000 gallons, located under the filter) or to the high-service pumping facilities. Our two Peerless vertical turbine high-service pumps, installed in 1954, have a combined capacity of approximately 3,000 gpm.

In addition to the telemetering system connected to the new elevated tank and the existing standpipe, instrumentation includes a Builders - Providence continuous-flow indicating, recording and totalizing system on the raw-water influent line, and Beckman instruments with a Foxboro Multi-Record EMF Dynalog recorder to indicate and record pH of the water in the flash mixer and flocculator as well as the finished water. These systems are adaptable for conversion to automatic control of their respective functions if we wish.

Once we received approval on financing, the project moved along in fairly rapid order. The new reservoir filled to capacity on July 12, 1959, just three months after we accepted the project. Work on the plant was completed early this year.

Wilson & Company served as consultants on the project. The Water Department is under the jurisdiction of the writer. ◄◄

Reservoir Construction

COMPARISON OF BIDS AND ENGINEERS' ESTIMATE

Item	*Successful Bidder*	*Bid Price*	*Engineers' Estimate*
Clearing	Allen Construction Co. Independence, Kan.	$ 23,800	$ 57,000
Dam	Freeto Construction Co. Pittsburg, Kan.	354,554	420,203
Fencing	Beachner, St. Paul, Kan.	34,720	37,060
Bermuda Sprigging	Beachner, St. Paul, Kan.	5,940	6,600
		$419,014	$520,863

City-owned Etnyre pressure distributor applies asphalt after the street surface has been shaped and rolled.

The "G-5 program" is named after the Grade-5 cover stone, here applied through a Grace spreader box.

San Antonio's "G-5 program" provides a new kind of maintenance designed to produce . . .

Better Gravel Streets

By LYNN H. ANDREWS
City Manager

Final compaction with this steel-wheel Ingram roller completes the job, making the gravel street maintenance free, under normal conditions, for nine to 12 months.

San Antonio's gravel-street maintenance problem is a big one, for as of last year we still had approximately 450 miles of such streets on our hands. In addition there remains another 300 miles of dirt, graded or unopened streets. Keeping these streets in good shape is an impossible task, and poor drainage and lack of sufficient grading equipment prohibit the routine blading required to correct chugholes and eliminate dust. Something had to be done to rid the Maintenance Division of the Public Works Department of this constant problem. Thus we set out to develop a process which would provide better gravel streets and at the same time decrease the overall cost of maintenance required for one year under normal traffic conditions.

An experiment in the early spring of 1959 consisted of a single course of asphalt treatment over a newly graded section. This surfacing proved satisfactory on several streets under local residential traffic and normal rains during the spring months.

In May 1959, we initiated a program to cover these gravel streets, as quickly as they were graded and rolled, with a single course treatment of inverted asphalt penetration. This program has become known locally as the "G-5 program" because of the use of Grade-5 cover stone having the following specifications:

Retained on ½-inch screen—0 to 10%
Retained on ¼-inch screen—60 to 100%
Retained on No. 10 mesh sieve—97 to 100%

We use two types of bituminous material—RC-2 and Texas Highway Department Oil Asphalt No. 175. The OA-175 is heated to 300° F. and applied with pressure distributors in the same manner as normal penetration asphalt surface courses are applied, using approximately 0.22 gallons per square yard. It is of 150 to 200 penetration and is used during the warmer months of the year.

The RC-2 oil, used during the winter, is applied at an average rate of about 0.27 gallons per square yard.

Preparation consists of providing

supplemental pit-run base material, all passing a three-inch screen, where needed, and then scarifying, grading, watering and rolling to obtain good compaction. The motor grader operators make minor corrections to improve drainage in the street sections, and give it a slightly higher crown for better run-off.

Curing

The street section is then allowed to "cure" for several days before one of the three city-owned pressure distributors operated by the Street Maintenance Division applies the G-5 surface. Cover stone is applied at the average rate of one cubic yard for each 90 square yards of surfacing. Application of the surface treatment costs the city about nine cents a square yard.

We find that under local residential traffic and normal weather conditions, gravel streets treated in this manner remain maintenance free for a period of from nine months to a year.

However, in a number of cases we found that, as a result of improving the street, traffic loads increased, making it necessary to apply a second G-5 course within 12 months. It is our intention to place a second course of asphalt on these streets as it is needed to insure a substantially maintenance-free surface for a considerable period.

Through April 1960, the Public Works Department applied the single-course G-5 surfacing to approximately 1,740 blocks or 134 miles of gravel streets. During this same period a second course was applied to about 214 blocks, or 16 miles, after necessary patching.

By the end of the summer of 1960 the city expects to cover another 600 blocks, or some 46 miles, with the first course, and add another 200 blocks, or 15 miles, to the list of streets having received a second course.

With over a year of experience to our credit we feel the G-5 program is proving beneficial and has eliminated the need for frequent grading of gravel streets. It also appears to be an adequate answer to the dust problem. ◄◄

The Police Role in City Planning

Just as new drugs are administered to cure the diseases common to the human body, so must new concepts be employed to cure the ills that plague a city struggling to survive its growing pains. Such pains manifest themselves in many ways. The need for adequate traffic ways, parking facilities, housing and the containment of physical appointments in changing areas are but a few.

Although Cincinnati's Police Division is not primarily responsible for the realization of these needs, it does use its full potential to help meet them. The extent to which the police can assist is demonstrated by their movement on two fronts to preserve the appearance and character of neighborhoods exposed to the full impact of population shift.

The first front is the problem of liquor. Mindful of the effect that a concentration of saloons, taverns and liquor stores has upon a neighborhood, the police have worked aggressively to avoid a saturation of taverns in places already affected by cultural change. This was done by objecting to the issuance of new liquor licenses and the transfer of existing licenses to conduct business in the sensitive areas. Objections were directed to the State Department of Liquor Control and were supported by substantial evidence showing the volume of police service provoked by taverns operated on a highly competitive basis. Like-minded community councils and business associations strengthened the objections with petitions solicited by the police.

The second front may be found in those changing neighborhoods where old mansions were purchased by unprincipled promoters who converted them into outlets for illegal liquor, gambling and prostitution. Acting on the premise that urban deterioration results only from the character of use and abuse to which property is put, the police have moved vigorously against such establishments. We are determined to discourage the practice by curtailing the profits through legal approaches. In one instance, the new use of the building was criminal in nature and its application resulted in the arrest of the occupant on specific vice charges. In another, quasi-criminal in nature, we sought to have the premises declared a nuisance and as such to have it abated. Success here meant padlocking the building and thus prejudicing those who made it available for illegal usage.

Although the Police Division's limited experience with these techniques precludes the luxury of predicting their worth, proper exploitation promises to insulate neighborhoods to such an extent that the need for conventional urban renewal will be materially reduced.

COL. STANLEY R. SCHROTEL
Chief of Police
Cincinnati, Ohio

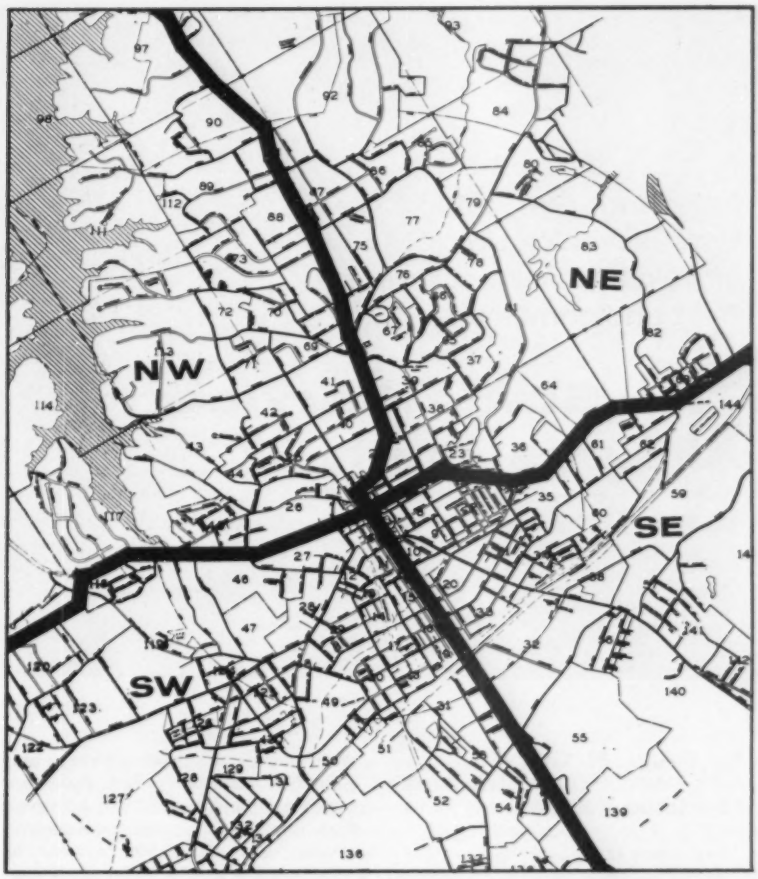
Brush Fire Preventer

Los Angeles County Weed Control District No. 4 of Val Verde, Calif., uses two International crawler tractors to pull disc harrows to destroy weeds and brush that present a fire hazard in the outlying residential areas of the county.

Uniform House Numbering

. . . provides a way to keep from getting lost in Gainesville, Ga.

By **GEORGE WHITEN**
City Manager



Gainesville is dividing its area into quadrants, as shown by this map of the city.

Gainesville recently modified and simplified its system of numbering houses and naming streets and it should now be easier to find locations in our city. However, we did this not simply to help our visitors. It will help our fire department find locations more quickly and accurately. It provides assistance to the police department. It aids in organizing refuse collection and disposal. All things considered, it is of material help in administering a city.

We divide the city into north-south and into east-west sections, with base lines running through the center of town. We then follow the customary practice of designating any street in a quadrant as "Northeast" or "Southwest" or by whatever quadrant it is in.

We have our share of diagonal streets; they carry building numbers that are the same as those of a street whose direction they most closely approximate. Thus if a diagonal street is more north-south than east-west, the building numbers on that street shall conform to north-south numbering.

We assign house numbers on the basis of one number for each 13.2 feet of property fronting the street. All property on the right-hand side of a street as one leaves a base line and proceeds outward bears even numbers. If the main entrance of a building falls exactly upon the line which divides a 13.2-foot interval, the building can have either number. If a building has a number of entrances, each serving a separate occupant, then each entrance will be assigned a separate number as long as numbers are available. When we run out of numbers, we affix a letter suffix. Multi-family dwellings with only one main entrance are assigned only one number. Apartment projects with more than one building will have one number for the total project. Buildings which face streets that do not extend to the base line are assigned numbers as though the street did extend to the base line.

The house numbering system and the map were developed and prepared by Alexander Johnson & Associates of Decatur, Ga.

The city-county planning commission currently is examining all street names, searching for duplication or similarity of names that might cause confusion. These are being changed as soon as recommendations are received. Every subdivision plan submitted to the city-county planning commission must show street names in harmony with the present system.

The city has adopted an ordinance governing house numbering and street naming. We will gladly send copies to any city officials requesting them. The ordinance goes into effect January 1, 1961. ◄◄

Lakeland, Fla., adds a new type of vehicle, reduces its large-container collection fleet and comes up with . . .

The Same Service At Less Cost

By EARL E. COLE
Assistant Superintendent of Public Works

A 67% reduction in collection mileage, a 43% reduction in time, and a 24% reduction in annual operating costs, without a reduction in service, cannot be passed off lightly. Careful estimates showed these accomplishments could be achieved through the purchase of a large compaction trailer and installation of a transfer station for our large-container garbage-collection operation.

This system has been in operation only since October 5, 1959, which does not give a very long period of time to confirm fully our expectations. We believe, however, that it will. The unproven points, which can only be proven by time, are the amounts set up by our Motor Pool for depreciation and operating costs. So far, operating cost has been less, but this is to be expected with new equipment.

Change vs. Expansion

On August 31st, 1959, Lakeland had 124 Dempster-Dumpster garbage collection containers in use. A minimum of five additional containers would be needed within the next fiscal year. Approximately 75% of the containers were located in the heart of the business area. Increasing traffic in the downtown area made it practically impossible to provide adequate service to that number of containers with our four hoist units working a normal 5½-day work week. From October to March, the peak of the tourist and business season, overtime added considerably to our operating costs. Even a simple breakdown of a hoist unit created measurable delay and expense.

Although Lakeland's two landfill disposal areas are relatively close in as compared to many cities (average seven-mile round trip for one, six-mile for the other), service demands were such as to require one additional hoist unit just to maintain our standard. Purchase of another unit was in the immediate offing, for our closest landfill, located near the north city limits, would soon be closed, requiring all refuse to be hauled to the south-side area. Such a change would not only in-

The standard compactor trailer was modified by the addition of a manually operated cover and by increasing the hopper height by 16 inches.

Employment of a transfer station reduced round-trip haul distances of the large-container hoist trucks from an average of 6½ miles to about 2¼ miles.

A windbreak on three sides of the trailer loading hopper prevents the wind from scattering debris and the ramp around the opening permits a man to wash out the containers with a hose after they have been emptied.

crease travel distance, but the nature of the routing would drastically effect the time element. Thus we faced the prospect of adding more units and manpower or adopting other methods of operation.

Transfer System Adopted

We considered several methods, and the local representative of Dempster Brothers of Knoxville, Tenn., made a preliminary survey of our conditions, suggesting use of a compaction trailer. Their plan did have merit, so we made an independent detailed study and feasibility analysis. The city administration and council accepted our report and recommendation, resulting in the purchase of one compaction trailer.

The unit purchased consists of a Dempster-Dumpster Compaction Trailer, Model DB-42, having a factory rated capacity of 42 cubic yards. We use it exclusively to haul garbage collected in the large containers served by the hoist trucks. Service to the residential area and more remote schools and commercial establishments remains unchanged and is provided by the conventional packer units.

The ramp or transfer station is located between two rather large buildings. On windy days air currents caused considerable blowing. A wind break constructed on three sides of the hopper overcame this problem, and a 24-inch platform encircling the hopper opening permits easy access for the container washdown operations. In our case we allow the wash-down water to flow into the trailer. This aids in compaction and the waste material absorbs all of the water used.

We had the trailer modified slightly to prevent littering of the streets while enroute to the disposal site and while loading. These modifications consisted of the addition of a manually operated roll-type cover over the hopper opening and extension of the hopper 16 inches above the standard roof line. This latter change was made because we are using an existing ramp and the hopper extension reduces the amount of free fall of garbage as it is dumped from the containers to the trailer, thereby reducing spillage and wind-blown debris.

Collection Time Changed

Changing the pick-up schedule from a daytime operation to a night detail eliminated most of the traffic problems and use of the compaction trailer permits handling of more containers than contemplated in the original study, with the use of only three hoist units. Two of the hoists work at night while the third unit operates during the day. The night crew takes all containers to the trailer, while the day operator uses either the trailer or the dump sites, whichever is the closer haul.

The furthermost outlying boxes adjacent to residential areas and/or tourist courts are collected first to hold collection noise nuisance to the early evening hours, and collection progresses to the downtown business district where noise is not quite so important. Only three men are used for this operation, two for the hoist units and one to operate the trailer unit. The trailer-truck driver also operates the packer and washes down the containers as they are emptied.

Collection records in Lakeland are kept on a cubic-yard basis rather than weight. However, the average payload weight of the type of material handled here runs around 19,100 pounds after compaction. The trailer will handle between 20 and 25 containers, half of which are 12 cubic yards in size and the other half eight and ten yards in size. These containers are not all loaded to capacity, for quite frequently large cartons are placed in them in the uncrushed state. However, this same condition existed prior to making the change, so our comparisons are correct. Garbage deposited in the containers consists of waste food-stuffs, papers, bags, sacks, cartons, containers, boxes and bottles, and such other small rubbish and

COST COMPARISON
Container-Collection Operation Methods

	Annual Mileage	Time Hours/Wk	Public Works Dept. Annual Operating Cost	Motor Pool Dept. Annual Operating Cost
Former	131,976	248	$41,600	$22,436
New	43,441	141½	$31,660	$12,385
Savings	88,535	106½	$ 9,940	$10,051

FORMER METHOD—five hoist units at $390 per month per unit rental and five drivers.

NEW METHOD—three hoist units at $325 per month per unit, one tractor-trailer at $450 per month, and four drivers. Rental rate on hoist units reduced because of reduced mileage.

refuse ordinarily accumulated about residential premises and business establishments.

Our cost survey consisted of studying the former method of collecting as to number of trips made each week, mileage, and time; and also the cost to the Public Works Department for equipment rental and the cost to the Motor Pool Department for operating and amortization. These same factors were considered in estimating the cost of collection when using the compaction trailer without changing the frequency of collection or standard of service. The accompanying table summarizes the results of this study.

Since the Motor Pool is a self-supporting department deriving its operating funds from other departments on an equipment-rental basis, the savings shown is a bookkeeping item rather than an actual cash savings to the city. However, the $9,940 saving of the Public Works Department is an actual saving to the city, for the Department can operate the large-container collection-and-disposal system for that much less under the new method.

The $450 monthly rental rate for the compaction trailer is made up of $226 for operating costs, $184 depreciation, and $40 overhead. These figures may be revised slightly after the Motor Pool Department has gained more operating experience with the unit. ◄◄

Nation's Largest Dry-Seal Gas Holder

The municipally owned gas system serving Long Beach, Calif., now has a new gas-compressor station with record-breaking features. Its Wiggins gas holder is the largest of this kind ever constructed, according to Long Beach officials. Built by the General American Transportation Corp., the holder is 214 feet in diameter, 174 feet high and will hold five million cubic feet of gas. The gas-compressor plant adjacent to the holder is powered by four 550-horsepower compressors. An unusual feature of the plant is the use of Westinghouse "Visicode" pulse-type supervisory control with two leased telephone lines that provide the interconnecting link between the central control room and the remote stations.

Simplicity keynotes the new plant. The operator's office and main control room are located conveniently at the main entrance of the plant building where he has ready access to the main supervisory control system console. The main instrument panel, 7½ x 15 feet, forms the east wall of the building. On it are mounted all the plant's indicating pressure and temperature gauges, process recording and controlling instruments, gas chromatograph control unit and recorder, and the semi-graphic flow diagram presentation. The panel uses pneumatic instrumentation combining the various Foxboro "Consotrol" components. A Consolidated Electrodynamics process gas chromatograph, complete with controller and electronic Leeds-Northrup strip recorder, continually analyzes the outgoing gas flow. City contracts guarantee a minimum of 1,000-BTU gas, and records must be available to substantiate this at all times.

The selection of the Wiggins gas holder represents careful study by Long Beach and its consulting engineers. Analysis showed that the dry-seal design and light operating weight of the structure meant that only 300 lineal feet of concrete piling was needed, compared with 40,000 feet for water-seal types.

The Long Beach gas system operates under the administrative direction of Leonard L. Bendinger, superintendent of the department. The new compressor plant was designed by M. A. Nishkian and Company, consulting engineers. ◄◄

The new gas holder breaks a record for size and sets hard-to-duplicate economy standards.

Focal point of a workable system for maintaining municipal records is a thorough cross-reference system. Burbank's is set up in Remington Rand Kardex equipment. Actual subject listings are on flexible Chaindex inserts.

Modern Files Permit More Efficient Government

By NAOMI G. TAYLOR
City Clerk
Burbank, Calif.

For city officials handling public funds, a regular audit by an outside expert is a necessity. We here think public records are entitled to the same careful protection.

Too often city officials feel they have discharged their obligation in connection with public records merely because they have a fire resistant vault at City Hall, and are careful to route their papers to it. However, our experience proved that papers can become just as lost within a thick-walled vault as they do when they are dropped into a wastebasket. What we learned is that putting away carefully is not enough. Your files must be set up for continuing use. The ability to find a paper is just as important as the machinery for filing it safely.

Naomi G. Taylor

Our situation in Burbank is probably typical for medium-sized cities throughout the country. We are right in the center of the population boom which hit Southern California after World War II. Building, expansion of utility services, and business growth increased tremendously. The city clerk's files expanded so quickly that old methods were outmoded.

Today, Burbank's official records are considered a model among Southern California communities. We accomplished this through a two-point plan:

1. Engaging qualified experts to study our filing problems and to reorganize the records for us.

2. Setting up a continuing program under which we periodically audit our procedures, up-dating and modernizing operations when necessary.

The first study of records management by the Burbank city government was conducted in 1950. At this time, following a pattern which has been carried forward into four other city departments, an analyst from the Remington Rand Business Services Department spent several days making an initial survey. In this preliminary study, the analyst actually made an inventory of our existing records. She also checked carefully into the sources, flow-patterns and uses of all such papers.

Within a few weeks we had a written recommendation for reorganizing the department's files. It is worth noting that the presentation was put forward in clear, graphic fashion in a manner which gave city officials and council members a complete picture of what was needed and how we would benefit from it.

As soon as our program was approved, the Business Services Department sent one of its installation specialists to our offices. She carried out the actual reorganization program, setting up our files for more efficient use and also training our personnel to administer them on their own.

This filing system since has proved itself conclusively in the operation of our city government. It breaks down our files, broadly speaking,

into two distinct categories: council action and document files.

In both cases it is critical to the establishment of a working system that we have a complete and readily accessible cross-index to all files. The indexes we use are set up on Kardex equipment. The actual index listings are in Chaindex cards. This gives us a control which combines the rapid reference of the Kardex visible system with compactness and flexibility. We are able to list up to ten subjects in each Kardex pocket, and can alter the index or make changes through the Chaindex method for interlocking listings.

With this index as a focal point, we were able to go into great detail in establishing subject headings for items of business coming before the council, or all the parties with whom the city has dealt. In a matter of seconds we can interrelate subject matter according to the file number, the name, the location or the subject title.

The same basic subject file system works equally well for routine correspondence, formal petitions and council agenda items. Because it is flexible, and contents of the files are so thoroughly catalogued, the job of keeping all records in the city clerk's office (for a city of over 90,000 population) has been streamlined so that it is now less than one full-time job.

Experience over the past eight years has also proved that it takes a continuing vigil to keep a filing system efficient once you have it set up. We needed help originally because we were so busy doing the work of running our department that we didn't have time to analyze the situation thoroughly.

Success in the city clerk's office has been duplicated in kind by four other city departments: the city attorney's office, the personnel department, the department of public works, and most recently, the city manager's department. ◄◄

Charlotte Adopts Master Highway Plan

North Carolina's recent approval of a $63,000,000 expressway and arterial route plan for the City of Charlotte is a significant example of state-municipal cooperation.

The city's thoroughfare plan, to be undertaken over a 20-year period, is one of the first major programs agreed on by city and state officials following enactment of a new law defining city and state responsibility in the coordinated highway and urban street systems.

Submitted by Wilbur Smith and Associates, consulting engineers of New Haven, Conn., the Charlotte plan calls for three new expressways, segments of which will form an inner loop around the central business district. Other features: a series of one-way street pairs and improvements in the central area, and a "spiderweb" network of radial and circumferential arterials to supplement the expressway system.

City and state officials will decide which streets are purely local in nature and which ones will be the prime responsibility of the State Highway Department. They will also confer on the matter of project priority and how rights-of-way can be protected and obtained.

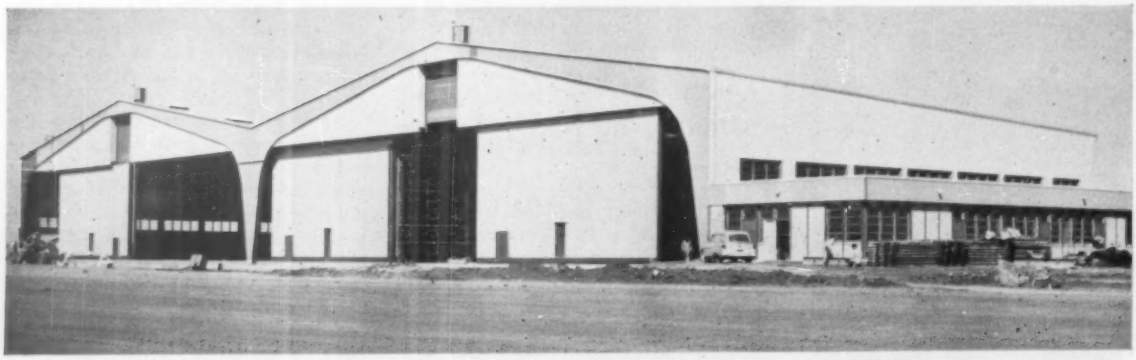
Commented North Carolina Highway Commission Chairman Melville Boughton: "This municipal-state cooperation is what the state and cities have needed for a long time." ◄◄

Municipal Hangar for Jet Transports

The largest municipal aviation hangar in central United States was recently completed at Will Rogers Field, Oklahoma City, Okla. The hangar will accommodate two jets of the DC-8, Boeing 707 or Convair 880 Class.

The double-bay hangar area houses up-to-date shops and offices covering 60,000 square feet. It is so large it required 400 tons of steel for the main and supporting beams and almost 100 tons for the roof joists. Of several designs considered, the double-span steel framework was chosen as the most economical. U. S. Steel's Tennessee Coal & Iron Division furnished 500 tons of structural steel for the main beams, supporting beams, and roof joists.

Designed by Hudgins-Thompson-Ball & Assoc., Oklahoma City architects-engineers, the new hangar was built to accommodate every need of the new jet passenger craft as now envisioned. It has six motor-driven main doors topped by roll-up tail doors. Siding is heavy corrugated steel and the roof deck is an acoustical material providing both strength and insulation. Heating is provided by gas-fired infrared ray units. An incandescent lighting system and large plastic "blisters" set in the roof afford light. ◄◄



Big enough to service two jet transports at the same time, this new municipal hangar at Oklahoma City's Will Rogers Field is said to be the largest in the central United States.

Twenty-five years ago in Oklahoma City.

The job: forcing a continual stream of pennies, nickels, dimes and quarters — 20,000 coins in all—through the new jamless Dual meter in Rockwell's Pittsburgh laboratories.

Parking Meters' Silver Anniversary

Turn back the clock a quarter of a century—to 1935—and walk along the main street of an average American city. What familiar present-day landmark is completely absent?

It's not cars—not lighted store fronts, nor streetlights, nor telephone and utility poles and wires, nor billboards, nor fire hydrants, nor phone booths, nor newsstands, nor—well, you name it. They were all there except *parking meters!*

The first 100 of these sidewalk sentinels went into operation along the main thoroughfare of Oklahoma City just 25 years ago, as reported in THE AMERICAN CITY for August 1935.

The idea for a mechanical parking meter was born in the mechanical engineering department of the University of Oklahoma in the gloomy winter of 1933-34. It graduated from laboratory to everyday use after a prominent Oklahoma City newspaper editor, Carl Magee, recognized its potential. Magee saw that a usable meter would serve the *dual* purpose of helping solve growing traffic problems and providing a badly needed additional source of municipal revenue. He formed the Dual Parking Meter Co. and farmed out to the MacNick Corporation of Tulsa, Okla., the actual production of the meters. Both MacNick and Dual later became part of Rockwell Manufacturing Co., Pittsburgh.

The First Meters

The first 100 meters tested on that Oklahoma City street were manually operated meters that took nickels only.

Immediately after that first meter installation on July 16, 1935, the demand for parking meters began to spread. Dallas, Tex., was the second city to install them—and after that the orders came thick and fast from all corners of the nation.

Today there are an estimated two million parking meters operating in approximately 3,700 American cities and towns. And, hundreds of thousands of meters have made their appearance in 87 other nations, it is reported.

The parking meter was rugged from the beginning. For example, 600 meters installed in Long Beach, Calif., in 1936 have been in continuous service ever since.

Changes in the meter include multiple-coin meters, double meters (two to a stand), and cheat-proof meters.

Not too long after World War II, parking meters began to appear on off-street parking lots. An allied development has been large-scale use of parking meters in railroad commuter parking lots. These meters range from the suburban commuter parking lot type with a 12-hour limit to the "pick-up and delivery" 30-minute-maximum type at busy terminals. The same broad range applies to airports—with 30-minute-maximum meters in loading zones and long-time meters in more out-of-the-way parking lots.

Colorful Uses

—Parking meters control fishing time at Fisherman's Pier at Santa Cruz, Calif., limiting each parked fisherman to four hours' worth at five cents an hour. The time limitation is important because these ang-

lers are mostly retired people "fishing for the table."

—In Millersburg, Ohio (an Amish center), the curb space around the Court House square is restricted to horse-and-buggy metered parking.

—In Dallas, Tex., recently, a parking meter was used to govern and measure the flow of wash water onto city streets. And Rockwell Manufacturing Company, which supplied the meter, has had similar inquiries concerning the possible use of parking meters to measure time in public showers and related facilities.

In addition to the $85 to $90 per year in revenue from the average meter, there is an extra 20% per meter—or $16 each year—in fines from parkers who forget time. Thus the annual total in an average town is close to $100 per meter.

The "average" community has about 400 meters, or an annual revenue amount of nearly $40,000. After deducting the cost of administering the parking meter program—about 15% of this gross—the community nets nearly $35,000.

But the primary goal of metering is still traffic control. Parking meters allow 50% more drivers to park by cutting down overtime parking.

The outlook for parking meters in their second quarter century remains bright. Traffic congestion and scarcity of parking room won't abate. Nor will the problem of finding additional sources of municipal revenue. Population growth is accelerating; rural population is shifting to urban areas; bumper crops of babies continue; and the export market looks better than ever. The industry believes the number of parking meters in operation will have doubled by 1970—and doubled again by 1980. That will be only five years short of the golden anniversary of the parking meter. ◄◄

Municipal Electric System Not for Sale

If someone wants to buy the municipal electric plant at Martinsville, Va., he is going to have to offer a lot more than $4,865,500, the amount currently proposed to the city council by the power utility in that area. A study made by City Manager Julian F. Hirst shows that this is considerably below the utility's net worth.

The municipal electric utility is a major financial contributor to the city's general fund. If the utility operation were removed, Mr. Hirst's figures show that this would mean a loss of over $354,000 to the city's budget. To make up this deficiency would require an increase in the tax rate of $1.04 per $100 of assessed value, raising it to a total rate of $2.89. In detail, the deductions would run as follows:

Direct appropriation to general fund	$272,290
Street lighting	12,673
Traffic control signals	1,899
Increased cost to water and sewer for billing and accounting	12,985
Loss in school tax revenue	9,408
Increased cost of electric service to city facilities	11,683
Subtotal	$320,938
Less increase in taxes from private electric utility	5,539
Plus average cash balance entered from the electric utility annually into the general surplus of the city	38,921
Grand Total	$354,320

Mr. Hirst pointed out that the entire sale could be applied to the city's general fund over a period of years to offset the revenue loss. If the entire $4,865,500 were invested prudently in long-term securities at prevailing rates of interest, and if $354,320 were deducted each year to offset the loss to the public income, then the entire purchase price would be exhausted in 18½ years. The money could not be used to pay any large portion of outstanding indebtedness, since much of it is not callable. It could, however, be used immediately for certain capital improvements.

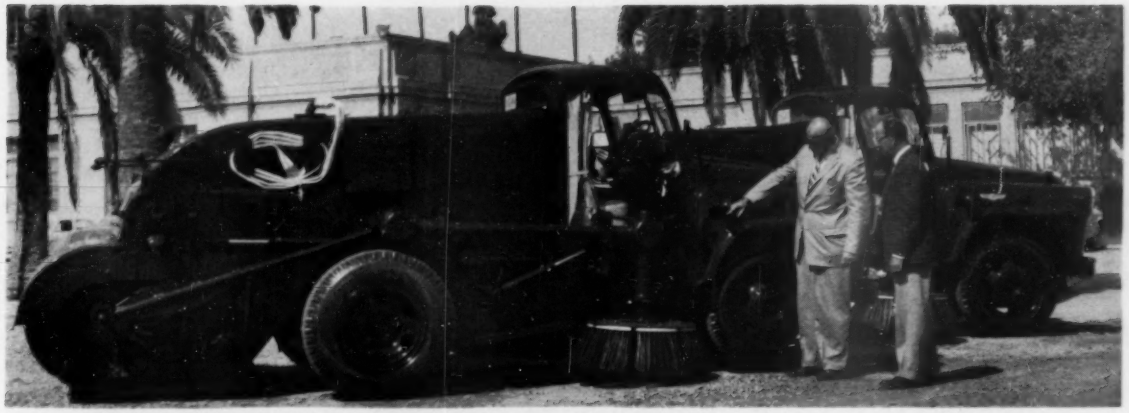
However, his study shows that the present municipal electric system is in excellent financial and physical condition, is providing within its own operating budget a planned program of capital improvements, is causing no burden to the city and is a major financial contributor to the city's operation. The system, he recommended, properly should be retained and the offer rejected.

After a month of study of the report the City Council took formal action to decline the offer. ◄◄

Sewage Plant Awards Presented

This year the Florida State Board of Health presented awards to seven sewage treatment plants as the best operated during the year 1959-1960. The winners, announced at the 28th Annual Florida Water and Sewage Works Operators Association awards banquet included: Best operated plant—any class, Southwest Orange County; trickling filter, less than 10,000 population, Village of North Palm Beach; trickling filter, over 10,000 population, Westwood Lake; activated sludge, less than 10,000 population, Carol City; activated sludge, over 10,000 population, Clearwater (Marshall Street); primary, less than 10,000, Fernandina Beach, and primary, over 10,000, St. Petersburg (northwest). ◄◄

Present at the banquet to receive the awards from David B. Lee, director of the Florida State Board of Health's Bureau of Sanitary Engineering (right) were (left to right): D. Joe Raye, Clearwater; Walt Kelly, North Palm Beach; Thomas Wagner and Kenneth Jones, St. Petersburg.



Municipally-owned sweepers like this and the one below are saving Norwalk $30,000 per year.

We Sweep Our Own Streets and Save

Norwalk investigates all methods of street sweeping and finds it most economical to do the work with city forces

By **E. FREDRICK BIEN**
City Administrator
Norwalk, Calif.

Street sweeping in Southern California may be accomplished in three ways: a city-owned-and-operated system, contract service from another governmental agency, and contract service from private enterprise. The curb-mile cost varies considerably from method to method and also varies with local street conditions, location of disposal sites, kind of equipment used and wage scales.

Norwalk is a new city, having been incorporated on August 27, 1957. We have an incorporated area of 10.5 square miles and approximately 275 curb miles. Our present population is slightly over 83,000. In September 1958, in response to citizen request, the City Council decided to upgrade the level of street-sweeping service. Up to this time we were using city-county contract service, sweeping commercial areas once each week and resi-

SUMMARY OF STREET SWEEPING COSTS
October 1, 1958 to September 30, 1959

Salaries and Wages	$11,908.71	
Workman's Compensation	254.85	
Administration Overhead @ 15%	1,786.30	
(Not an actual dollar expenditure)		
Total Salaries and Wages		$13,949.86
Maintenance and Operation		14,122.24
(Includes garage rental @ $2,160		
and liability insurance @ $183.06)		
Capital Outlay		
Equipment Amortization (1/5th of $17,573.92)		3,514.78
Total Sweeping Cost—One Year		31,586.88

Cost per curb mile = $31,586.88 ÷ 15,512 = $2.036

dential areas once every ten days. The new program called for sweeping residential streets once each week and commercial streets and major arteries three times per week.

Before entering upon such a broad program we thought it best to find the most economical method of doing the work. Thus sweeping specifications were prepared and proposal forms mailed to prospective bidders.

We also asked the County of Los Angeles to submit a "courtesy" bid for our consideration.

The proposals received from qualified private contractors ranged from a low of $44,784 ($3.06 per curb mile) to $56,712 ($3.35 per curb mile). The "courtesy" proposal amounted to $62,712 or $3.60 per curb mile. All proposals were on an annual basis.

Because of this wide divergence in bids, the Council requested a study be made of the cost of doing the work with city forces and city-owned equipment. This study showed we could operate our own street sweeping program at a cost of approximately $2.01 per curb mile. Although some of the local contractors claimed our cost estimate was unrealistic, the City Council, on the recommendation of the city administrator, authorized the establishment of a city-operated street-sweeping program. Shortly thereafter we purchased two three-yard Mobil-Sweepers at a cost of $17,573.92 and hired personnel to get this new municipal activity under way.

Estimate Confirmed

After a full year of operation, we made an analysis of the cost and the service factors of the city's street-sweeping program. The total cost of operation from October 1, 1958 to September 30, 1959, came to $31,586.88, or $2.036 per curb mile. During this period our two machines swept 15,512 curb miles and traveled another 5,934 miles in "dead runs" going to and from the dump. Tachographs on both machines assure us of accurate daily-operation records as far as the operating and sweeping mileage is concerned.

The table on page 105 gives a breakdown of the first year's operating costs.

The following facts attest to the effectiveness of the program.

1. City-owned operation resulted in a savings of approximately $30,000 over the city-county contract method previously used.

2. The number of "service satisfaction" calls received at City Hall and at the Norwalk Chamber of Commerce has increased.

3. The number of service complaints has shown a marked decrease.

4. Street-sweeping crews have reported a renewed "pride of community" amongst the citizenry.

Thus through actual experience we are convinced that so far as the City of Norwalk is concerned, we can sweep our own streets and save. ◄◄

Santa Barbara's Police Building

By the summer of 1960, Santa Barbara, Calif., will have a new police facilities building. The two-story-and-basement reinforced concrete structure, budgeted for $500,000 was designed by Welton Becket and Associates, architects and engineers. The first floor contains administrative and staff offices in the front and detention facilities in the rear.

The dispatch room—communications nerve center of the police facility and the entire police force—is also located in the front part of the first floor. Calls from citizens will come into this room over 60 telephone lines. Contact with the police force will be maintained by shortwave radio, and contact with other enforcement agencies over a teletype.

The dispatch room will have control over an intercom system for the police building with 100 stations and a paging system for areas not served by the intercom. A control board with flashing lights monitors all security doors.

The building will be wired for closed circuit television to be installed in the future for more efficient supervision of the detention areas.

At that time, the television receivers will be located in the dispatch room. The room will be so arranged that it can also serve as a night business office.

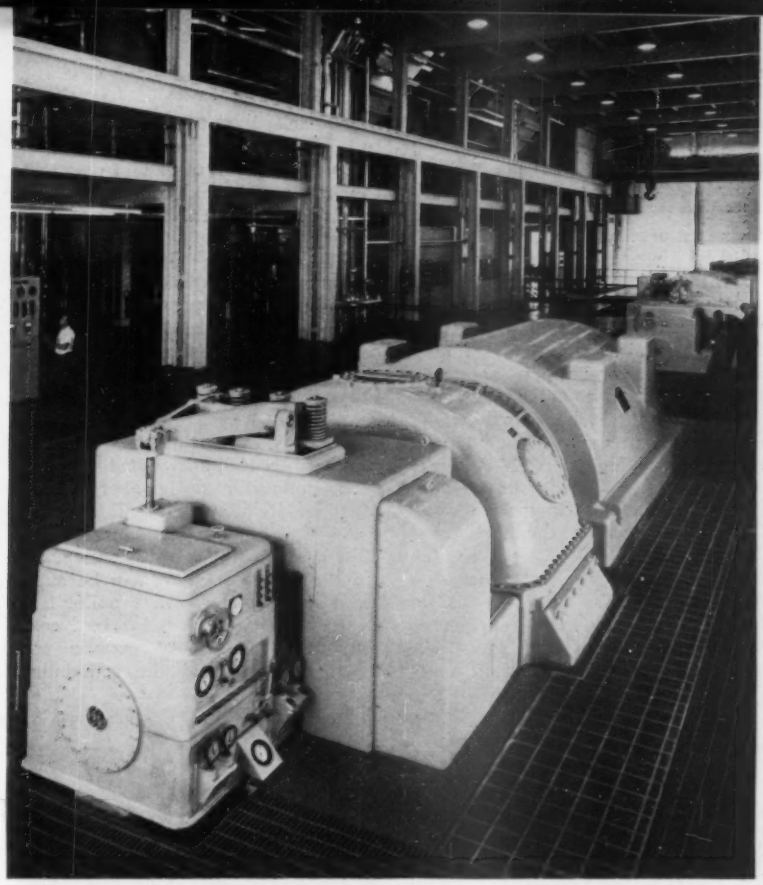
Detention facilities for 70 persons have been planned for the rear portion of the first floor. Included are nine cells which can house four men each, two special detention cells for one man each, a drunk tank with a capacity of 12 men, a trustee dormitory for 12 men, and cells for eight women.

The walls of the guard-walk corridors are enclosed with tempered glass for maximum supervision with minimum staff.

The structure will be set back 60 feet to line up with the County Courthouse. This setback will provide an impressive approach through the use of a series of terraced steps and depressed planting areas. Building and landscaping will be highlighted by means of concealed yard lighting.

EDWARD L. ABBOTT
Mayor

Santa Barabara's police building will be ready next summer.



These three big turbo-generators are the backbone of the power production in Colorado Springs' George G. Birdsall Station. The city's second station, the South Steam Plant, is in the process of being enlarged.

You Have to Plan Fast

. . . for electric power expansion programs in Colorado Springs or the power demand will pass you by

By **B. R. PENNINGTON,** Lutz and May Co.
Consulting Engineers, Kansas City, Mo.

At Colorado Springs, Colo., electric power consumption is growing at the rate of 12% per year, or half again as fast as the national average. This has required a stimulating planning and design program on a long-range basis in order to keep ahead of the need for more generating capacity.

This record of sustained growth dates back to the years immediately following the end of World War II. Colorado Springs' South Steam Plant, started in 1925, had a total installed capacity, prior to 1948, of 15,000 kw. This consisted of two 2,500-kw Westinghouse generator units, and two 5,000-kw General Electric units with their associated auxiliaries.

However, during that period, the city realized that its power generating facilities would not be adequate to meet the surging need. Population here has been growing, stimulated by such military installatons as Fort Carson, the North American Air Defense Command, the Continental Air Defense Command, and the Air Force Academy.

Plant Capacity Doubled

Consequently the city retained our company to design and supervise construction of additions to the South Steam Plant. We arranged for the construction of a 10,000-kw addition which almost doubled the plant's capacity. This new capacity was supplied by one General Electric turbo-generator able to deliver 10,000 kw at 80% power factor. A Springfield boiler provides steam to the unit, rated at 150,000 pounds per hour at 410 psig and 750°F. The turbine exhausts to an Allis-Chalmers condenser that has 13,000 square feet of surface. The addition includes a J. F. Pritchard cooling tower of 14,000 gpm capacity, of the induced-draft, counterflow type.

This plant, with its increased capacity, was adequate only for a few years. Almost at its completion, the city initiated the design of the new George G. Birdsall plant that ultimately would have a capacity of over 55,000 kw. This plant was named in honor of Mr. George Birdsall who served as mayor of Colorado Springs from 1919 to 1942. In 1953, the city installed the first

unit, of 16,500 kw; a year later saw the installation of a second, of equal size; and three years later, a third of 22,000 kw. All three turbo-generators are General Electric units generating power at 13,800 volts.

Each one has its own Springfield boiler; two have 160,000-pounds-per-hour capacity and the third, 220,000 pounds. Each has its own Worthington condenser; two provide 15,000 square feet of condensing surface and the third, 20,000. Each unit has its own cooling tower; two are J. F. Pritchard 16,500-gpm units, and the third, a 22,000-gpm Santa Fe Tank & Tower unit.

As this indicates, the equipment at this plant is designed on the unit system. Each turbo-generating unit has its own complete set of auxiliaries and is independent of the other units except for low-pressure steam header for fuel oil heating. Each has two motor-driven full capacity boiler feed pumps. Evaporators are utilized to supply the make-up condensate requirements of the unit.

Old Plant Again Doubled

However, that was in 1957. Three years now have passed and again the city has retained us to design a new addition at the South Steam Plant which will more than double the capacity of the South Steam Plant.

At the present time the city has purchased a 44,000-kw Westinghouse turbo-generator designed for 1250 psig and 950°F which will exhaust to a Worthington condenser with 40,000 square feet of condensing surface. The new unit will be supplied steam from a Riley boiler firing natural gas and pulverized coal and rated at 425,000 pounds per hour. Contracts for the remainder of the equipment will be awarded soon.

The units in this system generate power at 13,800 volts. This is transformed to 34,500 volts in the primary distribution system. Both plants are interconnected with the Public Service Company of Colorado and the Southern Colorado Power Company through a 115,000-volt line that is interconnected through the Rocky Mountain Power Pool to the North West Power Pool in the Pacific North West. This interconnection is used to back-up the electrical system during emergencies.

The Colorado Springs system operates under the direction of Mr. R. D. Nixon, Director of Utilities. Mr. F. H. Wiley is Chief Engineer of Utilities, Mr. C. J. Blasing is Superintendent of Electric Production and Mr. Horace Woehler is Superintendent of Transmission and Distribution. ◄◄

Tokyo Transit Battling Population

Tokyo is the heart of Japan. It is not only the seat of the Imperial Palace and the capital city, but it is also the center of politics, economics, culture and education. One of the most important items in city administration is the problem of mass transportation and traffic congestion, since Tokyo's population shows an increase of 300,000 each year.

Eighty-six percent of the 8.91 million inhabitants of Tokyo are concentrated in 28% of the city's 781 square miles. While public transportation has been modernized since World War II, the growth in population and the increase in number of vehicles has produced traffic congestion in the downtown area and has slowed transit. The city is attempting to relieve the problem by better streets and off-street parking facilities. Speedy construction of underground rapid transit facilities within the city is the present chief need.

Most types of public transit are operating in Tokyo. For instance, 1,172 street cars are operated by the municipality on 40 routes and haul as many as 1,700,000 passengers a day.

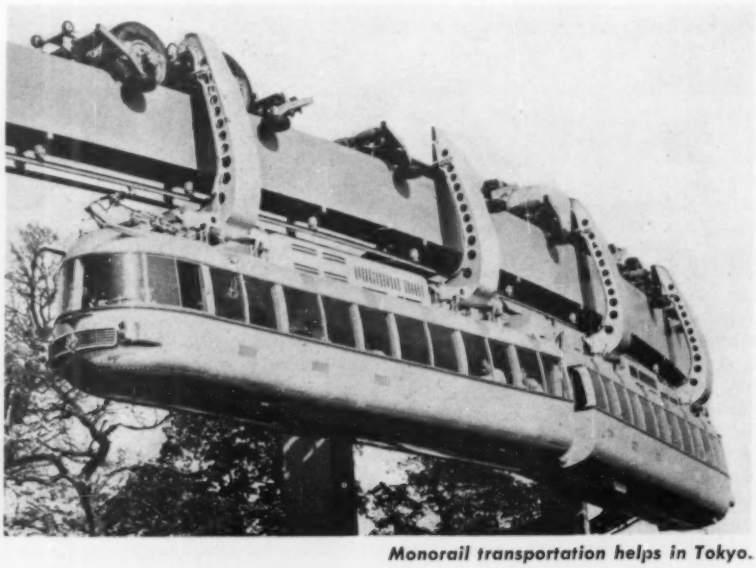
Municipal bus operation started in January 1924 with 800 TT-type Fords to relieve tram car transportation which was largely suspended due to the severe earthquake of September 1923. There are now 1,400 diesel buses on 105 routes with a daily passenger load up to 800,000. In addition there are 102 trolley buses on four routes which have a daily passenger load of nearly 100,000.

Since it opened to the public on December 17, 1957, monorail trains had carried 1.1 million passengers, when detailed inspection and maintenance work was performed in December 1958. It was recommended that in the design of monorail systems for future construction, careful consideration should be given to reducing maintenance costs.

The Transportation Bureau of the Tokyo Metropolitan Government expects to complete its Magome-Oshiage 10.8-mile municipal subway line in 1962. Also under construction is a 13-mile line by Teito Rapid Transit Authority, to be completed in 1965.

Japan's first subway, opened for about a mile in 1927, is now nine miles long. Another line, ten miles long, is also in operation.

Though population has increased 20% since 1954, public transit riding is up only 16%. ◄◄



Monorail transportation helps in Tokyo.

The same tractor with various attachments digs the trench (above), lowers the pipe (right) and backfills. Two such units save Valdosta some $30,000 a year.

Valdosta, Ga., invests in new equipment, finds that in the first year . .

They Earn Their Cost Twice Over

By **HOMER D. REED**
City Manager

In municipal administration as in business administration, it is frequently necessary to spend money in order to make money. This was proved dramatically in Valdosta, Ga., recently with the purchase of two Massey - Ferguson tractors equipped with Davis backhoes and front loaders; by spending $14,750 we now save $30,000 annually.

Preliminary studies indicated that replacement of hand operations with two tractors would save approximately $15,000 annually in labor costs. Results have far exceeded expectations. Following the purchase of the tractors at a cost of $14,750, six laborers were released from the payroll at a saving of $15,000 per year. However, this was only the beginning of the actual savings that have been made. The work output of the tractor-equipped but smaller crews tripled in one instance and doubled in another. This brought additional savings in the form of increased work performance. Actual labor and equipment savings exceeded $30,000 during the first year.

We assigned one of the tractors to a drainage crew engaged in installing storm sewers and driveway drainage pipe. Although reduced in size from six men to three men, this crew increased average production from 100 feet to 300 feet of pipe per day.

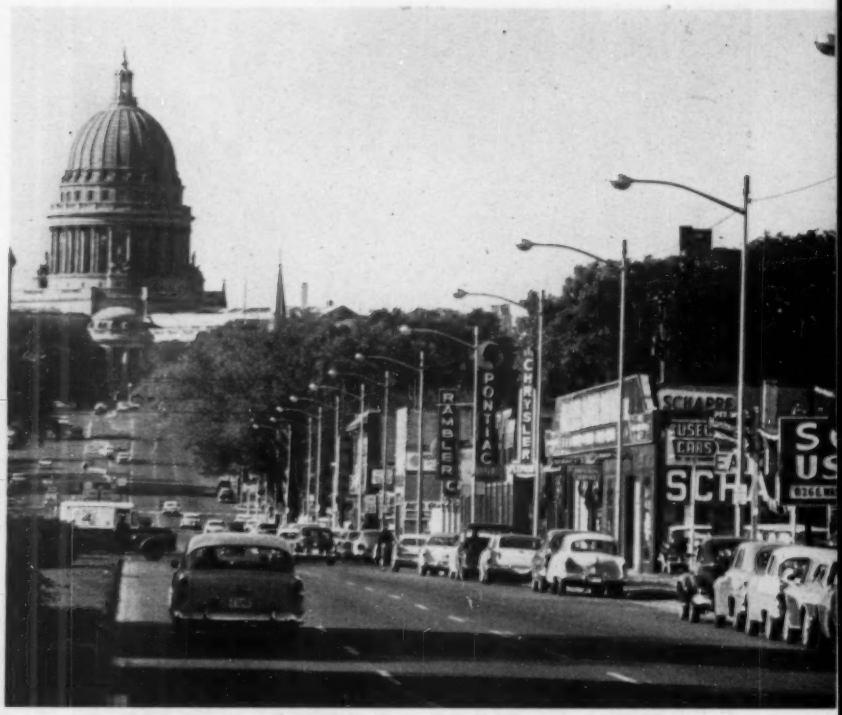
The Massey-Ferguson Work Bull 303 tractor with Davis Model 220 Backhoe and Model 500 Loader is the only piece of equipment assigned to this crew except for a truck to transport pipe and materials. First, the excavation for the storm drain is dug, using the tractor and backhoe. Next, the men lay the drainage pipe, using a pipe-laying attachment that is interchangeable with the bucket on the front loader. Finally, after the pipe joints are sealed, the tractor backfills the ditch using a bucket or dozer attachment on the front loader. An instant-reverse, automatic transmission is particularly valuable in the backfilling operation. The tractor operator can change from forward to reverse motion (and vice versa) instantly, without shifting gears, by switching from one accelerator pedal to the other.

Second Tractor

The second tractor we assigned to a crew engaged in installing water and sewer taps and repairing water and sewer mains. Formerly, this crew could utilize a Bucyrus-Erie Model 15-B Backhoe on larger jobs. However, most excavation for water and sewer taps was done by pick and shovel since the large Bucyrus-Erie machine frequently required an entire street to be closed to tap into water or sewer lines. The result has been reduction of the water and sewer crew from six to three men, almost doubled production of the smaller crew, and release of the Bucyrus-Erie equipment for larger jobs.

The routine for the tractor is much the same in making water and sewer taps as it is in installing drainage pipes. Excavation work is done by the tractor and backhoe and backfilling is done by the tractor and front loader.

When not required on the work for which they were purchased, these tractors are used on a variety of other jobs. For example, when a heavier tractor was out for repairs, one of the new units took over the job of loading trucks at the city's dirt pit. On other occasions, the tractors have substituted for other equipment in digging graves at the city cemetery, picking up street sweepings off the street, and cleaning drainage canals and borrow ditches. In fact, our employees are finding new uses for the versatile tractors every week and still further savings are expected. ◄◄



Street lighting is scheduled for continuous improvement. This street, with lights supported on Union Metal tapered Monotube poles with 8-foot arms, typifies the work currently being done.

Madison, Wis., Plans Capital Improvements

. . . and schedules its purchases of new equipment

Madison, Wis., has a detailed plan for its improvements that will be completed in the next six years. These cover major projects that include everything from the construction of a new civic auditorium to the purchase of vehicles and equipment needed to carry out its municipal functions.

The airport program anticipates a larger terminal building to receive and handle the increased volume of passengers, freight and mail.

It also includes acquiring two new $25,000 trucks with rotary snow-plowing equipment to replace lighter units now in use. One will be purchased this year and another next. The units will be available to the Park Department during its spring and early summer operations. A bulldozer is scheduled for replacement by a rubber-tired front-end loader. The budget earmarks $14,000 for this change.

Civil Defense will be upgraded in the new budget, by an $11,900 program for sirens to be installed over a four-year period. A new staff car with two-way radio also will be purchased for the Civil Defense Director.

With ward boundaries being redrawn, following the 1960 census, the city expects that the continual increase in population will require additional voting machines. Six machines are programmed for 1961 at a total cost of $9,000.

Sewer Construction

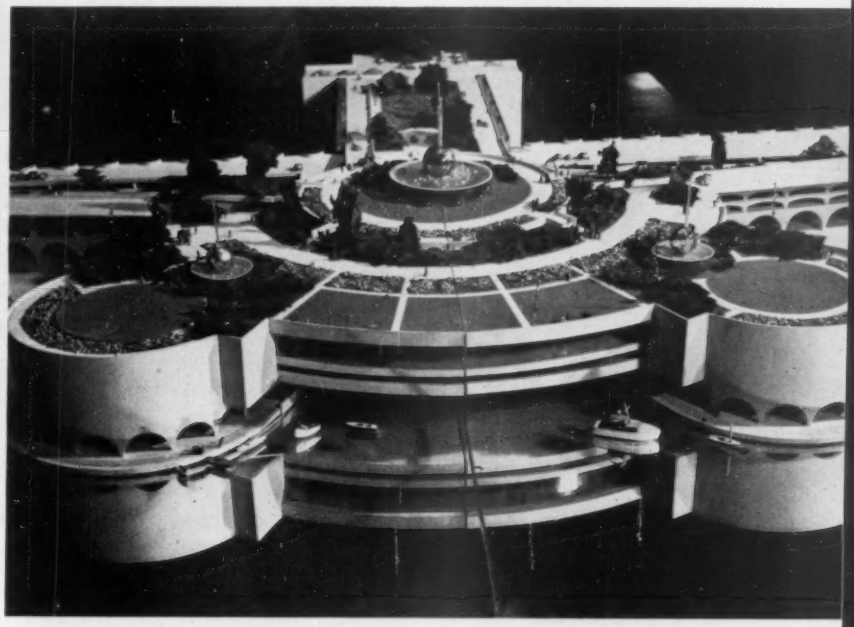
Normal sanitary sewer construction has been programmed at an annual rate of $400,000 for the next six years. A new interceptor for the southwest areas of the city will be installed at a cost of $100,000. A new interceptor for other areas also may be necessary. Many of the areas now being developed are in terrain which requires the use of lift stations; also, annexations have resulted in the addition of unimproved areas which will possibly require interceptors and pumping stations. New storm sewers are also programmed. For this year, the budgeted cost is $200,000; for each succeeding year until 1966, the budget figure is $300,000.

The city also plans to replace its backhoe and loader in 1961, budgeting $15,500 for this purpose.

The Fire Department is scheduled to have three new fire stations and a 20-year-old pumper will be replaced in 1962 by a new 1,000-gpm unit.

To care for Madison's Lake Mendota area, the city is planning new boathouses and docking facilities at an estimated cost of $8,500. Special boats for such lake work as algae control, weed control, inspections, are scheduled for replacement in 1961, 1963, 1965, and 1966. Three will be 25-foot boats costing $9,000 each. One will be an 18-footer with an estimated cost of $5,100. Certain other boathouse additions are on the program.

Among the improvements to the



The waterfront civic center and auditorium also are scheduled for completion in the capital budget program.

library system is a new main library building requiring an investment of about $2,000,000, to be approved at a referendum in November.

Capital expenditures for the motor equipment service also receive attention in the Madison program. The city plans an additional West Side garage in 1962, at a cost of $150,000, and certain vehicle storage buildings totalling about $26,000. This department also will receive five twin-post hoists, each costing $3,000; a front-end alignment machine, costing $2,500, and a heavy-duty wheel balancer which will cost an estimated $1,300.

Among the improvements to the parks will be new floodlights for tennis, ice hockey and baseball fields. This will average roughly $12,000 per year. The cemetery will have a new $11,000 service building and is scheduling replacements of a crane, half-ton pick-up truck, hydraulic digger and front-end loader, rubber-tired tractor loader, aerial truck, two half-ton pickup trucks and two tandem dump trucks and a patrol grader.

The police plan to acquire 11 new patrol cars and two 26-foot inboard patrol boats. An addition to the police radio tower is also scheduled and the city and county will join in this work.

Street Maintenance

For the street department, the 1960 budget provides two Fox sanders, one mono-rail system for the garage, one Jeep with cab and plow attachment, one V-plow for a Galion grader, and one V-plow for the Tractomotive front-end loader. The following years will see the purchase of two front-end loaders, two leaf loaders, three street sweepers, a ten-ton road roller, 15 refuse-collection trucks and bodies, an asphalt distributor, a crawler-type tractor, two snow-blower machines, a grader, an asphalt steamer, a hydro-crane. The total will represent an investment of nearly $375,000.

For traffic engineering, the city is budgeting $25,000 to replace obsolete street lighting. The department also will obtain a pair of utility trucks.

The Water Department plans a new well, an above-ground storage reservoir and replacement of certain major pieces of equipment. As new areas of the city are subdivided and developed, the department estimates an annual expenditure of $300,000 for new mains. The new well will represent an investment of $190,000; the storage reservoir, an estimated total cost of $400,000. The equipment being replaced includes a truck-mounted hydro-hoe at $11,000; a new hydro-crane and a second hydro-hoe at a cost of $12,000 each.

The total program contemplates expenditures of nearly $48,000,000 of which $30,000,000 will be financed through long-term borrowing. The entire program, adopted by the Madison Common Council, is contained in a report issued by Mayor Ivan A. Nestingen. ◄◄

No piece of equipment can be serviced or repaired without a credit card. The uniform, hard hat, vehicle identification marking on equipment and red flashing light on truck cab all reflect upgrading of the Public Works Department.

Save Through Equipment Management

Fresno's three-step approach to equipment management produces benefits in less than one year of operation

By **M. J. CAROZZA**
Director of Public Works
Fresno, Calif.

How much money would it cost your city to replace all of its existing equipment? As a matter of fact, how much equipment needs to be replaced this year? These are but two of the questions the City of Fresno, Calif., faced last July.

In trying to answer these questions, we found that the city had accumulated a bill for $800,000 in equipment depreciation and that an expenditure of more than $1,500,000 would be required in the next ten years to replace existing equipment. Yet eight months after this condition was reported to the City Council, the city received its 200th piece of new equipment under a sound equipment-management program.

To achieve this we took the following three-step approach:

Established a Working Capital Fund to account for and to finance costs and purchase.

Developed a priority Equipment Replacement Program.

Converted many pieces to a Purchase-Maintenance Program.

First of all, we realized that an accurate inventory was most essential for sound equipment management. Even though such a statement is not earthshaking, few eyebrows can stay immobile when a six-year-old tractor appears seemingly from nowhere, or an over-supply of vehicles develops when a pool operation is planned.

To secure the inventory and at the same time develop accuracy in accounting for vehicle costs, we adopted a system which is often considered as the backbone of our American economy—the credit card.

The old and the new. Now that Fresno operates a sound equipment management program all units are replaced long before they reach the "dead-line" stage.

Our credit card is similar to that used by any oil company and the forms used to charge equipment costs to a department were designed for imprinter machines. The credit cards fit into an aluminum bracket under the dashboard of automobiles or some similarly handy place on heavy equipment.

At the start, we gave each piece of equipment a new asset number and a credit card. No unit can be serviced or repaired in the municipal shop without the card. By the end of the first month 90% of the "lost" equipment came "out of the woods."

Working Capital Fund

This fund serves as an accounting device for the equipment maintenance operation, including the municipal shop functions and the purchase of new equipment. Monthly reports prepared on each piece of equipment give mileage or hour usage, gasoline and operating costs, direct labor and parts cost, depreciation, and an overhead charge.

Total monthly costs for any piece of equipment are charged to the using department. In the case of pool cars, which are on a purchase-maintenance agreement, a mileage charge reflects depreciation, tire, gasoline and overhead costs. Since the Working Capital Fund is self-supporting, an overhead charge covering shop costs, other than direct parts and labor, is charged equally to each piece of equipment. This overhead charge figure varied from 30% to 50% during the first few months of the program. Experience has shown 40% to be adequate.

Where the Working Capital Fund accounted for equipment costs, the Equipment Replacement Program gave direction and management to the use of existing equipment.

While making the inventory the Public Works Department conducted a separate replacement survey. This survey requested a description of existing equipment and accessories, suggested replacement date, and recommended type of replacement equipment. The various department heads gave conservative estimates as to when their equipment would need to be replaced, bearing in mind that it would be impossible to make up the $800,000 depreciation deficit in one, two or even three years.

We were surprised to find that a tabulation of the survey showed a well-spaced pattern of replacement. Requests for the first year, excluding pool cars, totaled $327,000, for the next year $280,000, and a decreased amount with each succeeding year.

With a preliminary appropriation of $301,000, we knew from the start that it was impossible to replace $327,000 worth of equipment as specified plus another $65,000 in

Group purchasing of equipment such as this fleet of Ford cars means better first cost, plus additional savings in the shop operation through parts standardization. The dealer maintains these cars under the purchase-maintenance agreement.

The replacement program provides for new equipment such as this Pitman Hydra-Lift on a GMC truck . . .

. . . but also permits the retention of usable old units as auxiliary equipment.

pool cars. However, with the incentive of more new equipment as the reward for economic operation, the first year's operation will probably fall less than $40,000 short of obtaining an impossible goal. Equipment scheduled for replacement this year, but held over because of a fund shortage, will be given top priority on next year's program.

The program is saving the city a considerable sum of money. Preplanning all equipment purchases enable the city to buy in large lots and, since most large purchases were made within a few weeks of each other, the bidding was very competitive.

Bids for one group purchase of 19 pickup trucks were $4,000 less than our estimated replacement cost. One factor which may have helped was the distribution of the proposed equipment purchasing schedule to all local equipment dealers.

Parts standardization due to group buying also provides new economy.

Establishing a city car pool turned out to be one of the biggest steps toward saving equipment money. This step alone reduced the number of city vehicles from 210 to 165.

All existing automobiles were collected, competitively bid upon and sold as part of a purchase-maintenance program. Under this program the city purchases new cars each year or whenever a car has 35,000 miles of use. A three-year contract with the dealer provides that he will guarantee a trade-in price equal to 74% of the original purchase price. The city pays a set mileage maintenance fee which covers repairs and all costs other than insurance, gasoline and tires.

Pick-Ups

Recently the Public Works Department acquired a group of pickups under a similar competitive bid purchase-maintenance agreement. Under the terms of this agreement the Department purchases a new unit every 18 months or 40,000 miles, and is guaranteed a trade-in value equal to 60% of the purchase price. As with the cars, repair work is done in the dealer's shop, resulting in a reduction of personnel in our own shop. Under this arrangement the city was offered pick-up trucks at a net price of $668 and a maintenance cost of 0.64 cents per mile.

The decrease in the number of cars used by the city now that a pool has been established, plus an increase in mileage for pool cars, makes evaluation of the purchase-maintenance of automobiles against our former method quite difficult. However, a similar evaluation with regard to pickup trucks has shown the purchase-maintenance plan to be a good investment. In fact, the city has reserved the right to double its purchase-maintenance contract at any date during the next three years.

Less than a year has elapsed since we reorganized our equipment management program. Already the benefits of our new program have begun to appear in the form of lower maintenance costs and more hours of actual equipment operating time. Group purchasing and the purchase-maintenance plan have also resulted in significant cash savings All phases of the operation dovetail to produce an integrated equipment management program. ◄

Plows and salt combine forces to keep Des Moines streets safe for travel even in the heaviest storm.

An unusually severe winter convinces Des Moines, Iowa, officials that it pays to go into detail when drafting . . .

A Snow and Ice Program That Works

By **ARTHUR GRIMM**
Director of Public Works

Take a city of 210,000 people, spread it over a 70-square-mile area and add a network of 750 miles of streets. Add to this a winter season neither mild or severe, with an average annual snow fall of 31 inches, but with weather so unpredictable that an outright guess is often as good as a forecast.

Complicate the problem with a 1958-1959 winter of 42 inches of snow and some of the worst traffic jams ever experienced in the city. Finally consider a director of public works, although from the snow country, new to his office and a new city manager, not from the snow country, anxious for a high level of service.

These were the elements that resulted in a drastic revision of snow and ice control procedures in preparation for the 1959-1960 winter season in Des Moines.

In the fall of 1959, City Manager Elder Gunter called a meeting of division heads concerned with snow and ice control to discuss the problem. At this meeting the writer outlined an entirely new program upon which he had been working. The city manager agreed to the principles expressed and ordered the program completed and put into effect. Unfortunately, members of the press present at this meeting seized upon certain figures and made the statement that the city could have everything under complete control within eight hours of the cessation of the snow. Actually this was a theoretical figure, with the more practical figure set at 24 hours.

Basic Steps

Our first step in developing the program consisted of placing every street into one of three categories. The primary system includes all major arterial streets and, wherever possible, bus routes. In Des Moines, bus routes are not always on major thoroughfares. The secondary system includes the collector streets of the city. This system is so planned that every resident in the city is within 1,200 feet of either a primary or secondary street.

We then determined the mileage of the streets in each section as well as the number of ten-foot lanes. The mileage of all remaining streets was also determined and the entire group tabbed as the residential system.

Next we inventoried all available equipment and, using the budget as a checkrein, started work on the details of the program.

Instead of using a chemical program, applying sodium chloride to some 20 miles of business streets only, as was done formerly, we extended this type of treatment to the entire primary system comprising some 156 miles of streets. Favorable climatic conditions and the traffic pattern led us to make this decision.

Actually this change was made with little increase in cost, for the optimum spread figure of sodium chloride was selected as 800 pounds per mile of 24-foot-wide street whereas former practice called for 2,500 pounds per mile. In addition, this changeover decreased the use of abrasives treated with salt.

With quantities and equipment known, there remained the tasks of balancing the routes for chemical control to prevent overlapping and of fixing the beginning and end of each trip at approximately the same point to eliminate useless travel time. With this accomplished, we had 14 chemical routes on which sequence and direction of travel were specified.

The greatly expanded chemical program made establishment of an

abrasive program relatively simple. We now use abrasive, consisting of salt and sand on a one-to-ten mixture, only when chemical alone proves ineffective, and then it is applied at danger spots along the chemical route. The balance of the abrasive program consists of spreading the material on trouble spots in residential areas and using it on an as-called-for basis.

Next came the difficult task of determining snow plowing routes and areas. We divided the primary network, consisting of 556 lane miles, into 29 routes on the basis of 29 pieces of equipment available. Each route is laid out to prevent duplication and deadhead travel. The route and direction of travel is indicated and the routes balanced to provide about 20 lane miles per plow. Our one-way street system and several eight-lane streets complicated the problem.

Plowing in the secondary and residential districts is handled on a district basis, with about 20 miles of residential streets included in each district. This mileage is somewhat less in districts where future expansion is anticipated. Twenty-nine such districts were established.

The only restriction placed upon the operators' actions in these districts was that priority was to be given to the secondary system within each district.

After establishing the secondary-residential districts we found it necessary to rebalance all primary routes so that the termination of each route would fall somewhere within the district assigned to that operator.

The final phase consisted of developing a snow removal program for the central business district and major commercial areas throughout the city. This consisted of listing all streets and the limits of the snow removal areas. We listed all streets in order of importance as well as the number of blocks in each length to assist in the selection of each night's program when exact conditions are known.

The entire program, with maps and a brief discussion of each phase of the program and a listing of all personnel together with phone numbers and shift times, was brought together in book form. This book serves as a single reference point for all snow and ice control procedures. Copies are in the hands of supervisors and equipment operators. We instructed the supervising personnel to use their books for notations as to changes found necessary from actual field experience.

Severe Test

The rather severe winter of 1959-1960, with its 57.1 inches of snow brought out several unexpected problems as well as unanticipated favorable reaction to the program.

Trouble became apparent in fairly short order and, as one might expect, the publicity given the program placed the department under considerable pressure to meet expectations. To gain experience, we computed the time involved for the chemical and plowing programs, assuming speeds of 15 mph for the spreaders and 10 mph for the plows. Department personnel then checked this in the field with cars, driving over the route during rush hours at speeds not exceeding those used in our calculations. Test results compared favorably with computed results and on this basis the entire program could be completed within eight hours. Because of advance publicity, the public expected this eight-hour service when we still felt a practical time would be closer to 24 hours (formerly the work was completed from 48 to 72 hours after it stopped snowing).

Extra wide streets posed another problem. Each route had been designed so that headway between plows would be a matter of minutes and we felt tandem plowing would be unnecessary with such a tight schedule. However, we were proved wrong and had to revise some major routes to allow for tandem plowing.

Certain equipment had to be reassigned. Plowing equipment consisted of ten graders, nine truck-

The city is divided into 29 plowing routes based on 29 pieces of equipment available.

Two of the city's ten graders help clear one of the main thoroughfares following a fairly heavy snowfall.

mounted plows and ten plows on packer refuse trucks. Each type is most effective under certain conditions and road surfaces and had been assigned accordingly. Actual experience required some changes.

One change made by the field men proved very effective. This was the establishment of three chemical routes designed to prevent trouble spots from becoming a problem.

Final Factor

The final factor anticipated but not resolved was the unpredictability of weather in this area. Many forecasts were completely incorrect and many storms were handled on the basis of by-guess-or-by-gosh rather than by use of the forecasts.

Personnel problems also entered the picture. One that was easily remedied was the request for larger maps showing individual streets rather than area or district outlines with the streets listed. How these maps can be read in the dark while plowing is difficult for the writer to understand but the change was made in the interest of improved personnel relations.

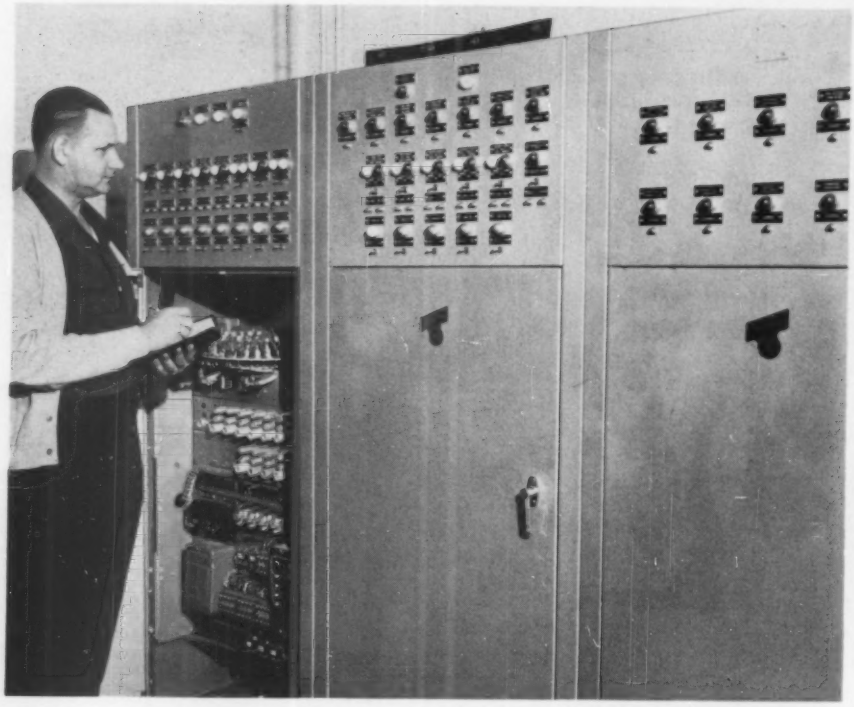
We also had to convince some of the personnel that they should not deviate from the prescribed routing of the chemical and primary plowing routes under any circumstance. Early in the program it was not unusual to find a plow or spreader deviating from the prescribed route and a carefully planned operation rapidly going to pieces. Once all employees gained a full knowledge of the program this trouble came to an end.

The success of the program became apparent by the reduced number of complaints received in the face of some rather severe and unusual weather conditions. Another indication was the absence of major traffic jams during the entire season—in spite of several heavy snow falls during the height of the rush hour.

A final indication was the fact that buses continued to run and schools remained open throughout the season, something which had not occurred in previous winters.

Credit for such a program does not belong to one person and this is true in our case too. So many persons were involved that all cannot be mentioned in this article but three should be listed. Special credit goes to Mr. T. Wiedenman of the Engineering Office for detailed and exacting work in preparing the program; and to Superintendent of Street Construction Louis Formaro and Superintendent of Street Sanitation Alex Monaco for their field supervision and effective work in transforming a paper program into an effective operation. ◄◄

A city-owned Athey loader removes snow; spotting the truck behind the loader reduces traffic interference.



Typical pressure transmitter at storage facility senses water level by means of a two-step Telestep containing a gauge and hand-automatic switches.

Albert Pruden, assistant superintendent of water, checks the main control panel (Unit A) from which the entire Morristown Water System can be controlled.

Water Works' Automatic Control Saves Three Ways

Morristown saves on labor, equipment, and money through two-wire, 29-signal control of far-flung water system

By SAMUEL S. TAYLOR
Waterworks Supt.

The older a water system becomes, the more complicated it is certain to be—and the Morristown, N. J., system is really old. History says that its beginning was primarily due to the near death of George Washington as the result of typhoid fever, contracted in 1799 from a contaminated well there.

The first recorded meeting to consider building an aqueduct was held on April 4th of that year and residents entered into an agreement to finance a brick tile conduit. The aqueduct was completed in June 1799 and since then, the system "jest growed, like Topsy."

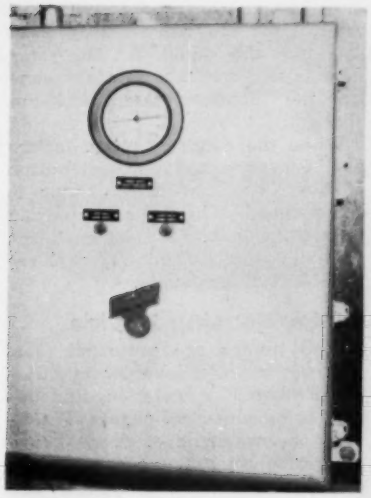
As the town grew to city proportions, then absorbed other communities, the water systems were thoroughly uncoordinated. They became a hodge-podge of manually controlled operations.

Through a series of stages the system expanded, keeping just ahead of demands until the town of Morristown was incorporated in 1865. One of these stages was replacement of the tile aqueduct by a two-inch bore, chestnut-log main that served a small, 100-gallon wooden cistern. Shortly after incorporation, the aqueduct company was cited for failing to furnish an adequate supply of water, and the citation demanded that the town authorities supply pure and wholesome water. The censuring action was followed by authorization for the town to supply the water, if a general referendum indicated public acceptance. A special election in 1868 defeated the referendum, and the company, the Morris Aqueduct Co., continued its forced and barely adequate expansion until, in 1919, it owned five different and widely separated sources of supply.

Deficiencies

A study that same year disclosed insufficient pressure (24 psi) and volume to comply with requirements of the National Board of Fire Underwriters. But it was not until May of 1923 that negotiations resulted in the sale of the properties to Morristown.

After the town acquired the water system, new surface and ground



A typical transceiver shares the spotlight with an auxiliary gas engine that is used for stand-by operation in case of power failure emergencies.

water supplies were provided to meet the demand and to provide for extensions to the system. For more than 20 years, users of the Morristown system used water without restriction, but expansion in local and outlying districts increased demands of the 1946-1955 decade to double those of the fairly constant preceding 15 years.

It was not until these demands forced almost round-the-clock use of the limited available sources of supply—with attendent operational difficulties — that Morristown decided to study the feasibility of automatic control of its water system.

The system of controls considered would provide all districts with maximum safeguards against pressure deficiencies and would assure the operation of the system to the best advantage at a saving in power costs.

It was found that, despite the topographic problem presented by seven separate pressure zones that range from 200 feet of elevation to 1,000 feet, integration of the entire system under one set of controls would fulfill these requirements. It was on the basis of this decision that a description of the system and its requirements was published and bids were asked.

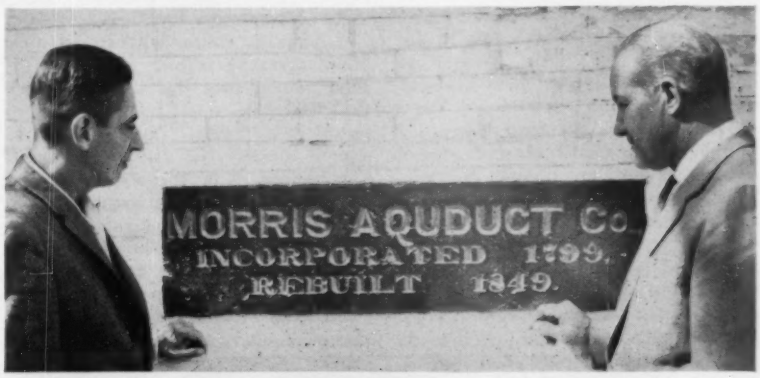
Possibly because of the challenging topographic problem, the only company to reply was Autocon Industries, Inc., St. Paul, Minn. The system, as proposed by the firm, a subsidiary of the Automatic Control Company, is operated completely by automatic controls. A central control panel in Morristown permits an operator to check the entire system for full operation at all times.

Storage Facilities

As storage facilities are depleted, transmitted signals operate the related well or booster station until the storage reservoir is at capacity. The well or station will then shut down. The Morristown grid has a sensing control that operates the cone valve at one reservoir when a fire or peak demand occurs in the system. This permits the supply and pressure of that reservoir to enter the grid, stabilizing the system until the demand has been met.

The central control also registers, by an alarm, the failure of any well or booster pump to respond to a demand signal, facilitating immediate attention by the operator and its early return to service.

The automatic controls also are capable of switching one system



The author (right) points out to Frederick Ferris, consulting engineer, the cornerstone in a rebuilt reservoir at the site of the original storage facility.

to another when necessary, making the reservoir and supply facilities of one system available to the adjacent one. Thus, in the event of a breakdown, or for tank or main repair, one system can supply another until the down system is back in operation.

A principal reason for town acquisition of the water system was the unwillingness or the inability of private companies to extend their mains. Since acquiring the properties, the town has tried to make its supply available to surrounding areas. With the seven individual systems, it has been necessary to charge out-of-town users an additional 10 to 15%.

Rates per 100 cubic feet are:

In Morristown	**low service—35¢**
	high service—38¢
Out of Town	**low service—38¢**
	high service—42¢

Hydrants are $62.50 per annum for the 4½-inch size and $75 for the 5-inch.

Serving the districts, in addition to the main Harmony Reservoir, are eight tanks or standpipes, with accessory pumps and boosters. In each distribution system, the water level at the tank or standpipe determines the operation of the pumps. The circuit operation for the control of each of these systems is similar. All circuits are interconnected by means of rented telephone wire connections and signals are transmitted over these lines by Autocon Telescans or Telesteps.

Control

The control consists of 26 units, all under control of the Main Control Center (Unit A). The operation of the entire Morristown Water System is controlled from this point.

The control is designed to maintain automatically the water system pressure and the levels in its several elevated tanks. Water is drawn from outlying reservoirs and deep wells.

The controls will shut down all pumps during peak power demands to avoid penalty power charges. This condition is over-ridden when an emergency low-water level occurs in any storage facility. The associated pump is then permitted to function as required. All pumps are restored when an emergency low-pressure condition occurs at the main Morristown distribution net.

Since the circuit operation of the controls for each of the systems is similar, a description of one circuit (Old Idlewild) will be given as typical of circuits in all systems.

Water level at the Old Idlewild tank is sensed by Unit B, located at the reservoir. This unit contains six pressure sensers, arranged to sense the reservoir water level in three steps. A three-step Telestep transmits these signals to Unit C at Littleton Well No. 1. Two steps are operational signals and the third is a low level alarm.

When the tank level falls, the pressure will fall, causing a pressure senser to close. This initiates a timing relay that energizes the multi-step Telestep transmitter. The signal is registered by the multi-step Telestep receiver located in Unit C at the Littleton Well No. 1. The contacts will cause a pulse to be transmitted to the main control panel (Unit A), causing a relay to energize contacts in the well pump motor, and the pump will start.

At the main control panel, "Pump Running" will light. This completes the normal starting sequence of the Littleton Local Well Pump No. 1, which pumps water into the Old Idlewild system and tank.

Pressure Senser

If the water level at the tank continues to fall, a pressure senser in Unit B will close, causing the second step of the Telestep to energize. This causes the Littleton Remote Well Pump No. 2 to start. The "pumps running" signal will be transmitted to the main control panel (Unit A). Main control is equipped with a "power demand control circuit." This consists of a time-clock that will turn on during peak power demand periods, shutting down the pumps to avoid the penalty power charges.

An emergency low level at the Old Idlewild tank will cause another pressure senser (Unit B) to close, energizing the third step of the Telestep and transmitting a signal as before. This activates Alarm Station No. 4 (Old Idlewild low alarm). Now the control overrides the time-clock control and starts this second pump on an emergency program.

Most of the pumps of the Morristown System are provided with a Protectrol, which shuts down a pump whenever it fails to deliver proper discharge. If a pump fails, either when starting or running, a time relay will complete its timing cycle, light the red warning light and stop the pump. At the same time it will activate at main control the "common pump lock-out alarm."

When the cause of pump failure has been corrected, a re-set button on Unit B will allow the pump to be restarted. When the pump is in operation again, the alarm station at main control (Unit A) will re-set itself automatically.

Water-Sensing Device

Well pumps are protected from low suction water level by an Autocon Probotrol, a water-sensing device using electrical probes. Whenever the water level drops below the probe tip *cut out*, it will stop either or both well pumps and transmit a signal to main control, activating "Littleton low-level cut-out" thus closing the circuit to Booster Station No. 1, starting that pump. This pump will run until the water level rises enough to touch the probe tip *restore*, re-starting the well pumps and stopping the booster pumps. Occasionally, it is desired to operate the pumps using the automatic position of the switches. The pump will operate in the same manner as before, except that the main control is by-passed. The pump may be started manually from Unit A as before.

Combining Telescans, single-step and multi-step Telesteps has provided the greatest possible economy through the use of the least number of lines. It accomplishes the shortest wire runs over low-grade two-wire circuits. Most telemetering systems use high-grade circuits, a number of wires or coaxial cable to accomplish a wide frequency response. The Autocon system, with its two wires, handles all 29 signals involved in the Morristown set-up. They provide great flexibility of control at the lowest possible cost in line rental.

Staff

The water department at Morristown employs six regular service men. These men, in the past, worked daytime hours but were on call 24 hours a day. With Autocon controls, the six men have been divided into two shifts of three men each. Where previously the several independent water systems needed daily checking, now the checking can be done at the Main Control Center. Most of the emergency calls received today are water-main difficulties. ◄◄

This five-year-old SUNBURST (Gleditsia triacanthos inermis aurea) is 12 feet tall. It will grow rapidly to a height of 35 to 40 ft.

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SUNBURST is easy to transplant and requires very little maintenance. Its rapid growth quickly makes a colorful showing. With excellent branching habit, SUNBURST develops a broadly pyramidal head and stately, symmetrical form. Mature height is 35 to 40 feet. It can be severely pruned to reduce its stature, responding with greater density and increased coloration.

SUNBURST is an ideal lawn tree because it creates no maintenance problem, causes no ground litter and its lacey, sun-dappled shade is actually beneficial to grass.

Professional test plantings at arboretums and horticultural colleges, and thousands of successful landscape plantings prove SUNBURST is extremely hardy in almost any soil or climate. One of the strongest trees known, it readily survives ice, snow, windstorm, drought and poor drainage. Write for prices and name of your nearest licensed grower.

You are cordially invited to visit our Painesville headquarters and our Circleville, Ohio, nursery during the summer season (May 15—August 15). We will be glad to show you our 1200-acre facilities, modern, mechanized equipment and some 360 varieties of trees and nursery stock.

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IMPERIAL® (Plant Pat. 1605) A naturally graceful, spreading variety with dainty, refined foliage and fresh green color. It looks mature even when young and grows rapidly to about 35 feet.

MAJESTIC (Plant Pat. 1534) A clean, graceful, symmetrically-branched tree. Produces a straight, sturdy trunk and compact crown without staking or special trimming.

MORE than a decade ago D. B. Cole set out to improve the characteristics of the thornless Honeylocust (Gleditsia triacanthos inermis) while retaining all of the best features of the species. Some of the successful results of his intensive program are illustrated here. Each of these patented new trees is far superior to any previous variety and each serves a specific purpose in modern landscaping plans. They are easily transplanted and quickly make a substantial showing.

These are economical trees from the standpoint of price, planting cost and extremely low maintenance and replacement cost. All three are strong and hardy, widely adaptable as to soil and climate, and highly resistant to disease, insects and storm damage.

Cole Nursery's 1200-acre mechanized operation assures you healthy plants, delivered in good condition. We can supply your needs in large quantity and wide variety from our list of 360 items. Write for our current catalog and the name of your nearest licensed grower of patented Cole trees.

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PAINESVILLE, OHIO
OHIO'S LARGEST WHOLESALE NURSERY

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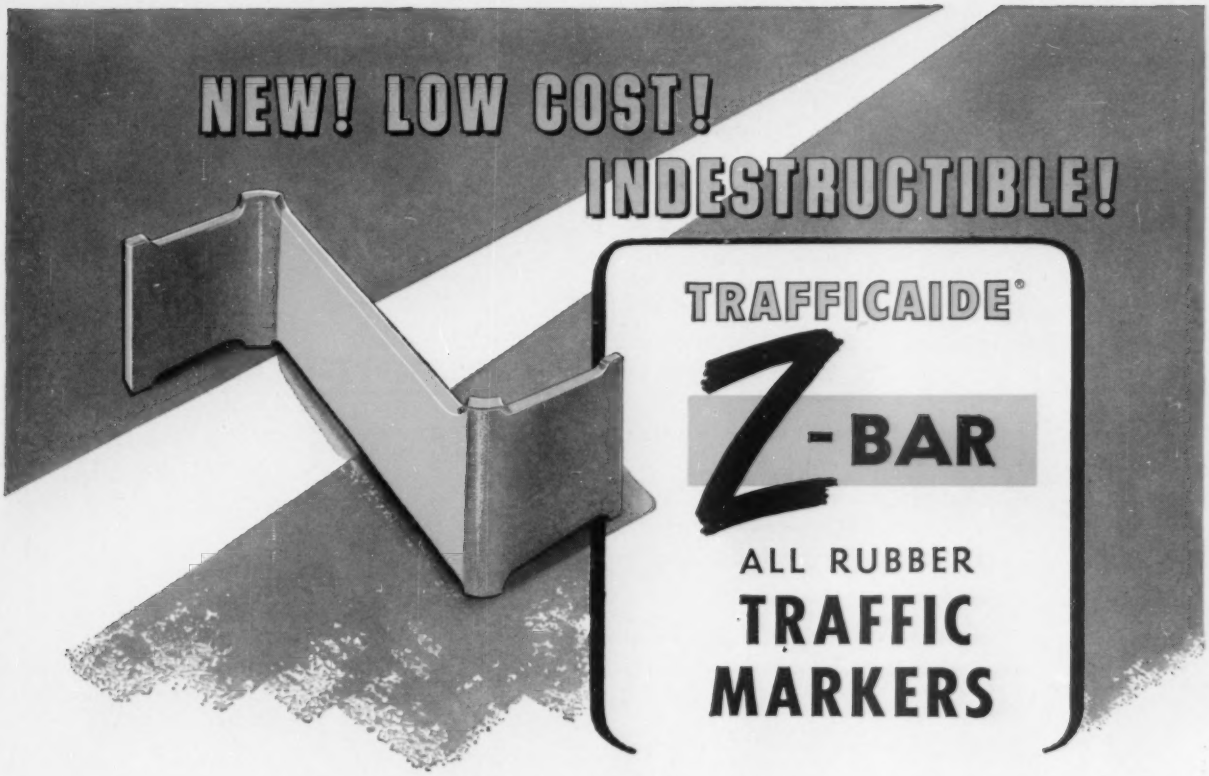

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Enclosed find money order or check for $ _____.

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San Jose, California, one of the fastest growing cities in the United States, has standardized on Union Metal 30-foot tapered, fluted steel Monotube poles for all new subdivision lighting.

This type lighting pole not only proved to be the most effective, but the permanency of construction, attractive appearance and economy of installation increased the preference for Union Metal.

Uniform lighting with Monotube poles has proved of value to many cities.

Residential subdivision lighting . . . standardized with 30' Monotube poles mounting incandescent luminaires.

UNION METAL

The Union Metal Manufacturing Company

Canton 5, Ohio Brampton, Ontario, Canada

MONOTUBE LIGHTING POLES

As traffic waits for the green signal, General Electric mercury vapor luminaires brighten the darkness on Central Park West; Central Park is at the right.

New York Lights Against Crime

A man strolls across a well lighted playground on New York's West Side; less than a year ago this spot was the scene of a double murder.

For all its gay white way, New Yorkers have long been conscious of the fact that better lighted parks, playgrounds and streets would reduce crime at night. As a starter, the Board of Estimate has supplied New York's Department of Water Supply, Gas and Electricity with $8 million to begin the massive job.

Before the project is finished, say in six years, New York's 5,800 miles of streets will be bathed in 2½ times the light now provided.

After three years of pilot studies in crime-ridden precincts, the huge metropolis found what other American cities are discovering—the criminal's most effective ally is darkness.

From industrial Cleveland to McPherson, Kan., forward-looking municipal officials are investing more and more dollars in relighting their communities. Reduced crime rates are the "profit." Burglaries have been cut as much as 92% by relighting, assaults 75%, robberies 27%. The Department of Water Supply, Gas and Electricity asked the Police Department to select five areas the officials would like to see relighted from a crime-prevention standpoint.

Police suggested the five precincts with high crime rates and the department went to work. More than $500,000 was spent equipping the five areas with new mercury vapor units. Meanwhile, police kept tabs on the incidence of various kinds of crimes in those areas.

Crimes of personal violence were sliced nearly in half; all other crimes dropped 10%. In addition to the drastic reduction in crime, the number of traffic fatalities decreased in neighborhoods where adequate lighting was installed.

Then there followed a program to relight the entire city. The Board of Estimate approved an expenditure of more than $28 million during the next six years. The initial budget for 1960 provides $8,300,000 for relighting streets, highways, play areas, shopping centers, housing areas and parks.

This long-range appropriation method is the only way to achieve an orderly relighting program. Previous relighting efforts were "patchwork improvements," in which isolated spots were lighted. These efforts are no substitute for area-by-area replacement of 200,000 incandescent lighting fixtures with mercury vapor units.

Installation of a 400-watt mercury vapor luminaire gives 120% more light than a 585-watt incandescent lamp and yet saves $7.30 a year in operating cost. The six-year program can show operating savings of $466,000 a year through the use of mercury vapor.

The department's program has spurred other groups

(Continued on page 127)

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Imagine the confusion if every state, every community designed and produced their own traffic signs. DIE EMBOSSED Sign Manufacturers promote the use of standard size, shape, colors and wordings as prescribed in the Manual on Uniform Traffic Control Devices published by the U.S. Bureau of Public Roads and affiliated organizations.

Die Embossed Signs *are your* Best Buy

(Continued from page 125)

to examine their own bailiwick, the City Housing Authority has begun a $500,000 program to improve outdoor lighting in 80 public housing developments in a move to discourage crime. William Reid, chairman of the authority, says that lighting in the projects was inadequate and promoted criminal activities.

All but a dozen of the city's developments are in the relighting schedule which will install new fixtures and lamps in 5,000 locations. Lighting brackets outside buildings will be raised 15 to 20 feet to spread the light across courtyards; and trees, which can block off 30% of the light, will be pruned. Mercury vapor lamps will be installed in areas that suffer most from vandalism.

The Triborough Bridge and Tunnel Authority plans to relight the city's bridges. Manhattan's borough president has authorized funds for tunnel lighting on the East Side's Franklin D. Roosevelt Drive. Merchant and civic associations all over the city sponsor new lighting for their areas.

A parallel program to relight New York's playgrounds was given powerful impetus last August when two boys were knifed to death in a dark West Side playground.

Forty of the playgrounds have already been drenched in light. Police have classified 392 playgrounds under the Parks Department jurisdiction as danger areas after dark. Thus, although the city has a long way to go in this area, results have already been tabulated from the above beginnings.

In a letter to WSG&E's chief engineer, Alexander Lurkis, the Parks Department pointed to a drastic reduction in vandalism in the relighted playgrounds. Vandalism in Staten Island's relighted play areas was virtually wiped out; in Brooklyn, it was down 86%; Manhattan showed an 81% decrease; and Bronx and Queens playgrounds reported identical decreases in vandalism: 50%.

"Furthermore," adds Samuel M. White, the Parks Department's director of maintenance and operations, "such floodlighting has diminished indiscriminate littering of playground areas with broken bottles, beer cans and other materials. Our recreation staff has also reported fewer disciplinary problems and much better control of the children and teenagers."

New York's Police Commissioner Stephen P. Kennedy says he is "greatly encouraged" by the results of the relighting program. "Better lighting is a great and effective aid to better enforcement," Kennedy declares, "for increased lighting decreases crime." It is particularly effective in the early hours of the morning when streets are largely deserted and lone policemen are responsible for wide areas.

In past years, New York's budget allocation for lighting streets, parks and playgrounds has run to about $2 million. For 1958-59, it was increased to $3 million, and this year upped to $8 million to provide for the installation of 20,000 new mercury vapor luminaires.

The $28,810,000 overall plan includes new lighting for crime areas, public works projects, (schools, hospitals, courts, libraries, etc.); housing projects, public and private; community works projects (including churches, theaters, community centers), and commercial areas like shopping, recreation and sports centers. The program is a catalyst for massive civic action and cooperation to make the city brighter and safer. ◄

Four Footcandles on Fargo's Broadway

Installation of 66 of the latest fluorescent street lighting fixtures has transformed Broadway in Fargo, N. D., from just another main street into a Whiteway —a Number One street in this part of the country.

The lighting also contributed to selection of Fargo as one of 11 All-America cities chosen by the National Municipal League.

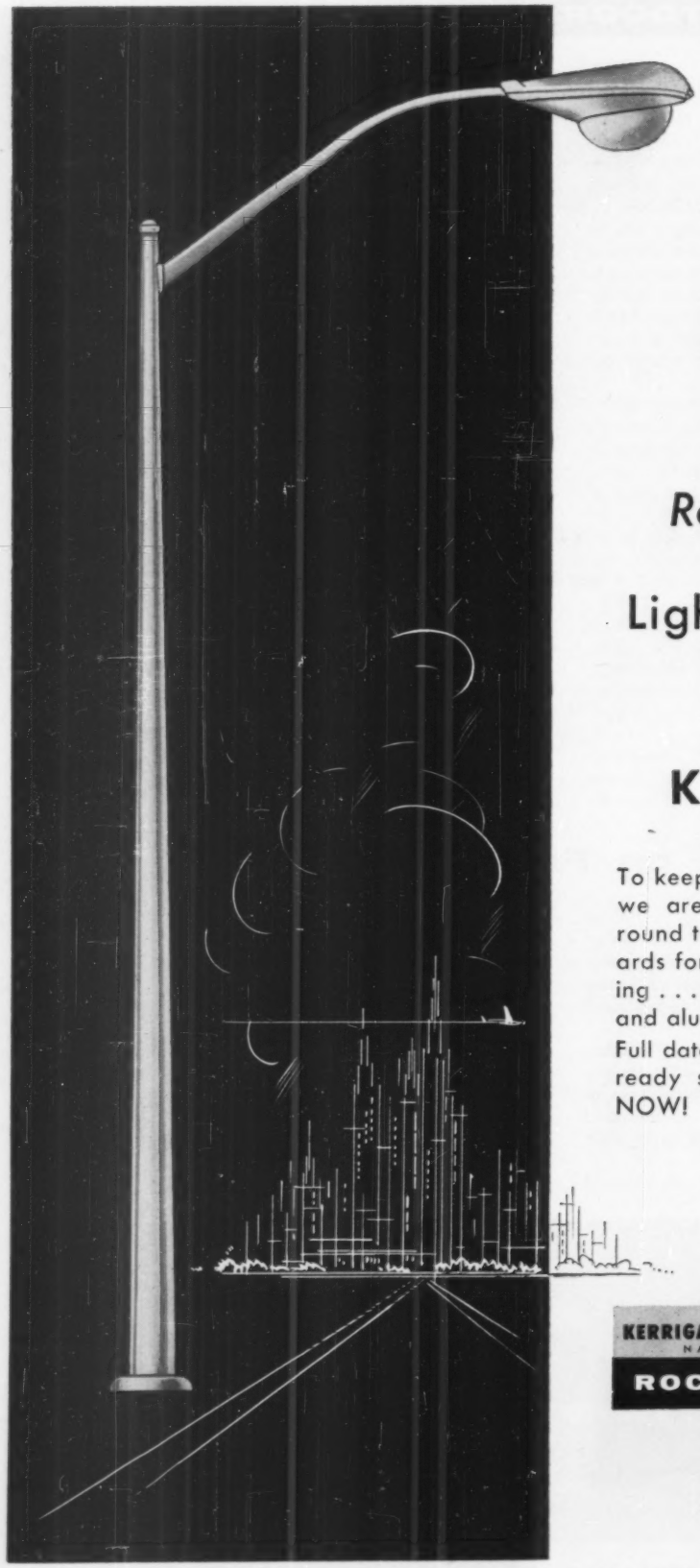
The six-foot, four-lamp General Electric luminaires provide almost five times as much light as the previous incandescents, though that system was as good as many throughout the country. It supplied 1.1 footcandles of illumination when installed in 1949. The fluorescents average 4 footcandles.

We chose fluorescent lighting because we wanted to provide maximum safety for pedestrian and vehicular traffic while lighting the fronts of stores with true color. Our merchants have noted a definite increase in night business since the relighting.

We wanted clear visibility without glare and an even distribution of light on the pavement. The fluorescents, mounted 40 feet apart, 30 feet high on davit-type steel poles made by Millerbernd Manufacturing Co., Winsted, Minn., require little attention, and at local power rates they provide more lumens per dollar than any other source.

HERSCHEL LASHKOWITZ
Mayor
Fargo, N. D.

With glare-free fluorescent lighting on Broadway, Fargo is well dressed at night.



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Seamless Round Tapered Aluminum Lighting Standards

by KERRIGAN

To keep pace with the growing market, we are now manufacturing seamless round tapered aluminum lighting standards for street, highway and area lighting . . . . . in addition to our line of steel and aluminum octagonal shafts.

Full data catalog for the new line will be ready soon, Reserve your FREE copy NOW!

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KERRIGAN IRON WORKS COMPANY
NASHVILLE, TENNESSEE
SUBSIDIARY OF
ROCKWELL-STANDARD
CORPORATION

Street lights in the business section of San Jose.

Street Lights for 100 New Residents a Day

The city of San Jose, Calif., has placed 3,000 new electroliers in new subdivisions since 1950. And several poorly lighted narrow streets have been converted into major thoroughfares complete with underground utilities and modern street lighting.

The subdivision lighting program has been an integral part of the city's annexation and expansion program, necessitated by the increase in population in the last decade from some 92,000 to over 200,000 persons, with another 100 persons still coming into the community daily.

Beginning in 1950 when 86 electroliers were installed, the number has increased until in 1959 alone, 1,516 new units were placed in service.

From 4 to 20 Thousand Lumens

The first major-thoroughfare relighting job in connection with a widening program was undertaken in 1954 along Lincoln Avenue in suburban Willow Glen. Utilities were placed underground in the 3,800-foot widened section that was previously lighted by nine 4,000-lumen incandescent lights suspended on a center span.

The new system consisted of fifty 20,000-lumen mercury vapor luminaires spaced 150 feet apart and opposite; lights are arranged in two series circuits. Each circuit is controlled by a photocell. The luminaires are Line Material with Type III distribution and color-improved lamps. The characteristics of this luminaire were particularly effective in this arrangement. The light level is 1.3 footcandles.

The standards used were Union Metal 30-foot octaflute, mounted on transformer bases and using six-foot arms. The poles are of an extra heavy gauge to provide strength to support banners and Christmas decorations which are suspended from messengers between the electroliers. The area has taken a new lease on life and become an attractive, prosperous addition to the community.

The Alameda, completed in 1955, was the next lighting project. The Alameda is a wide tree-lined boulevard rich in the history of early-day California. The challenge was to maintain the historic "atmosphere" of the street while providing traffic with safe lighting.

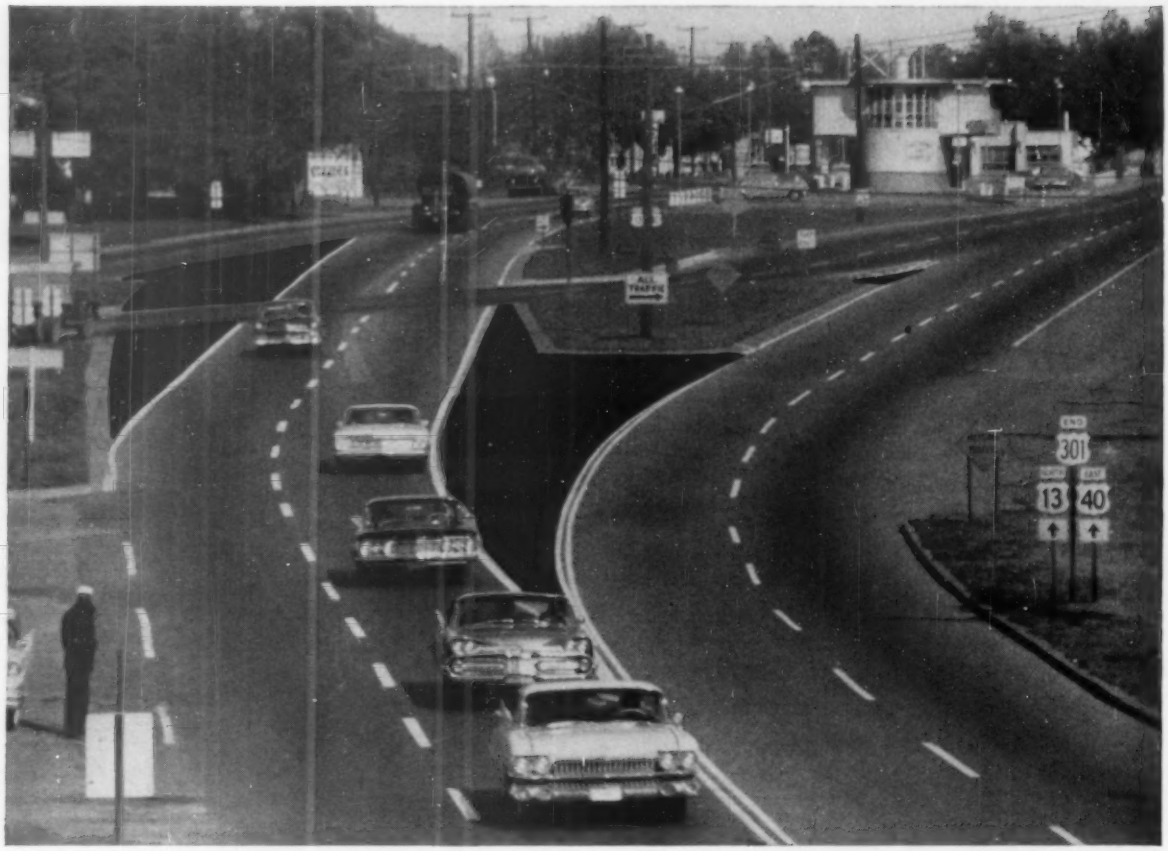
Subdivision lighting.

Involved was a 2.2-mile section lighted with 2,500-lumen lamps in 8x16 glass balls mounted on nine-foot cast-iron standards. Lights were spaced on a staggered arrangement of approximately 100 feet.

Another problem faced by the designers of the lighting system was the large trees along the storied avenue. Orders were to hold trimming to a minimum.

As finally designed and installed, the system consisted of 164 luminaires spaced on an average 80-foot staggered arrangement. They were General Electric luminaires with 10,000-lumen incandescent lamps. The poles were Union Metal 25-foot octaflute, mounted on a transformer base with 15-foot mast arms giving a 12-foot overhang from the curb face, well out of range of the foliage.

(Continued on page 131)



COLOR ADDS A NEW DIMENSION FOR SAFER HIGHWAY MARKING

...Parlon keeps it bright

Colored traffic paint has been in use for several years as a special signal—for instance on the green crosswalks used in so many communities to protect school children and pedestrians. Here is an extension of that application, being used with notable success by an Eastern state on its most heavily travelled highways.

The use of color—a brilliant green approximating the grassy areas of island and median strip—provides a distinctive run-out area on the pavement before the vehicle comes in contact with curb or barrier. This is particularly effective where traffic-stream divergences, cross paths, and other unexpected pattern irregularities exist to confuse the high-speed motorist. The color areas advise the motorist of the impending change, guide him to the correct lane markings, and give, where necessary, a safe haven for stopping before the curb is mounted.

In these new uses for color on street and highway surfaces, as in all conventional striping, laning, edge-marking, and stenciling applications, traffic paints made from Parlon® chlorinated rubber can be depended on for long life and for the fast dry that opens the roads to traffic sooner. Ask your regular paint supplier for the test data on Parlon that proves these values. Or, if you prefer, write for a showing of the motion picture "Highway Life Lines" which tells how the right paint can be safely and easily selected and specified.

Cellulose Products Department
HERCULES POWDER COMPANY
INCORPORATED
Wilmington 99, Delaware

CR60-1

(Continued from page 129)

The roadway width of The Alameda is 74 feet and the initial level reached was 0.74 footcandle. The system was divided into eight series circuits, each controlled by a photocell. It was recognized at the time as the best lighted in the area.

The next project, completed in January 1958, involved another major crosstown arterial that had become inadequate to meet the growing traffic needs. This was San Carlos Street widened for a distance of 4,200 feet. As on Lincoln Avenue, the task was to widen the street, install lights and place utilities underground. The area involved extended from the main downtown section southwestward to a fast growing suburban area.

Widening was to 74 feet and the old lighting system, fourteen 4,000-lumen incandescent center-suspended luminaires, was replaced with an underground-fed system of 53 mercury vapor luminaires arranged on a staggered 80-foot average spacing. Luminaires were by Line Material and 23,000-lumen silver white mercury lamps were used. The standards were Union Metal 30-foot octaflute, with a six-foot arm.

The initial light level achieved was 1.28 footcandles. The two series circuits supplying the electroliers were controlled by utility-owned photoelectric switches.

More recently, lighting has been completed around the new Civic Center complex of city and county buildings. There are 44 General Electric 400-watt mercury vapor luminaires with 23,000-lumen silver white lamps on Union Metal 30-foot octaflute poles. The light varies from 1.3 footcandles in front of the City Hall to 0.6 candle on the lesser streets.

This is the only project of those listed above that was financed wholly with public funds. All others were by property assessment, the traditional method of financing this type of improvement within the city.

The Older Section of the City

People living on Fremont Street, 1,800 feet long between The Alameda and Park Avenue, in an older section of the city, noted the improved lighting within the subdivisions and determined to improve their own neighborhood's lighting. This was typical of a number of residential areas which circulated petitions and secured the necessary signatures to create an assessment district.

The existing two 4,000-lumen incandescent center-suspended luminaires on Fremont Street were replaced with eight 4,000-lumen electroliers, each with its individual photoelectric control. The new luminaires are Line Material incandescent enclosed units, Type II distribution with Tabet photocontrols. The poles are Union Metal anchor-base 30-foot octaflute, with six-foot arms. Light levels were 0.2 footcandle. The average front-foot cost to property owners was about $1.

Another major project currently being undertaken in conjunction with property owners and the State of California is the widening and lighting of Alum Rock Avenue, a continuation eastward of the city's main thoroughfare, Santa Clara Street. The paving portion is being undertaken by the State of California, and curbs, gutters, sidewalks and street lighting are financed by special assessment.

A total of 11 electroliers are being installed 72 feet apart, staggered. Poles are 30-foot Union Metal. Luminaires specified are Type IV General Electric 400, or Westinghouse 400-watt mercury except center island twin-mounted luminaires which are specified as 11,000 lumen. An initial footcandle level of 1.4 on the 82-foot roadway is expected.

The 6.6-ampere series circuits are to be controlled by photoelectric switches owned by the Pacific Gas and Electric Co.

Data on night crimes and accidents on Alum Rock Avenue have been collected by the Police Department and will be compared with a like period after completion of the project. Considerable improvement is expected over the present inadequate eighteen 6,000-lumen center-span luminaires now used. As elsewhere, merchants and landowners are enthusiastically awaiting the new lighting system. Police Chief Ray Blackmore said that it has been amply demonstrated that with improved lighting there comes a reduction in accidents and crimes.

Plans are presently being formulated for improvement in the lighting system in a large portion of the downtown business district. Representatives of the city's Public Works Department, the Pacific Gas and Electric Company, and merchants and landowners are working together on plans for replacing or remodeling the incandescent post-top, porch-type luminaires installed in 1926.

H. J. FLANNERY
City Engineer

Old lighting in the foreground, new lighting on South First Street, San Jose, Calif.

PREFERRED

program to provide

General Electric introduces *PREFERRED LIGHTING* —a new program offering *exceptional customer service* on outdoor-lighting systems.

With *PREFERRED LIGHTING* you get a full selection of fast-moving equipment—equipment most preferred on a national basis as evidenced by present purchases—plus application analyses combining the latest lighting trends and the most economical and effective ways to do specific lighting tasks.

In addition, *PREFERRED LIGHTING* makes possible exceptionally fast delivery of street-lighting systems. On products of our own manufacture, equipment is usually in your hands in one to three days after receipt of your order.

General Electric offers you the widest variety of equipment necessary to meet your general and special lighting needs. But, your optimum use of the "customer-selected" *PREFERRED LIGHTING* systems will bring the immediate benefits of superior product performance . . . one-to-three-day delivery . . . easy selection, ordering, and application . . . all adding up to top value for your lighting dollar.

PROVED EQUIPMENT PERFORMANCE

When you select G-E *PREFERRED LIGHTING* equipment you'll know you are buying the type of equipment which has proved most popular with customers all across the country—*preferred* by a majority of customers for performing the same lighting tasks

PROVED PERFORMANCE results because General Electric *PREFERRED LIGHTING* represents customers' choices of the best in filament, mercury, and fluorescent lighting. Only 148 catalog numbers (5000 are available) meet 95% of all roadway lighting needs.

QUICK DELIVERY—one-to-three-day delivery is maximum for most General Electric *PREFERRED LIGHTING* equipment including pole anchor rods and base templates. Poles can be ordered for one- to four-week shipment, allowing time for curing concrete bases prior to installation.

LIGHTING... a new General Electric more light per dollar on America's roadways

you are interested in solving. These systems have met the test of customer evaluation in terms of cost of light, and over-all operating and maintenance economy ... *your best guarantee of a modern lighting installation.*

ONE-TO-THREE-DAY DELIVERY

With *PREFERRED LIGHTING*, you can reduce your inventory investment. Much of your warehousing and inventory expense is borne by General Electric.

A simplified product line, pre-designed lighting systems and layouts, and the ability to order from a single source mean you can order most lighting equipment by phone. What's more, in most cases you can expect to have your equipment at the installation site within one to three days of your order!

SIMPLIFIED SELECTION AND APPLICATION

General Electric's new *PREFERRED LIGHTING* Designer's and Buyer's Guide is a compilation of all pertinent data you need to select, order, and apply complete lighting systems or components.

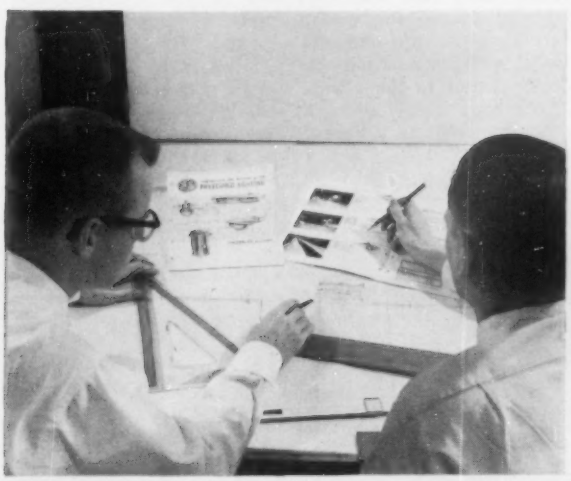
By following "customer-approved" *PREFERRED LIGHTING* recommendations, you save the time and expense of individual lighting layouts and calculations. Factors such as distribution patterns, spacings, mounting heights, and maintenance factors are already worked out in advance. Just select the type of lamp and the footcandle level you desire.

PREFERRED LIGHTING IS AVAILABLE NOW

Get your *PREFERRED LIGHTING* Designer's and Buyer's Guide, today! Use it as a basis for a thorough evaluation of your present buying practices, in comparison with the benefits offered by General Electric's *PREFERRED LIGHTING* approach. Your G-E Apparatus Sales Engineer or Agent will be happy to help. General Electric Company, Outdoor Lighting Dept., Hendersonville, N. C.

Progress Is Our Most Important Product

GENERAL ELECTRIC



EASY APPLICATION saves you the time and expense of designing individual layouts, and considering distribution patterns, spacing, mounting heights, and maintenance factors. Selection of *PREFERRED LIGHTING* equipment is a simple matter of deciding on source and footcandle level.

New PREFERRED LIGHTING Guide

General Electric Company
Section F 460-02
Schenectady 5, New York

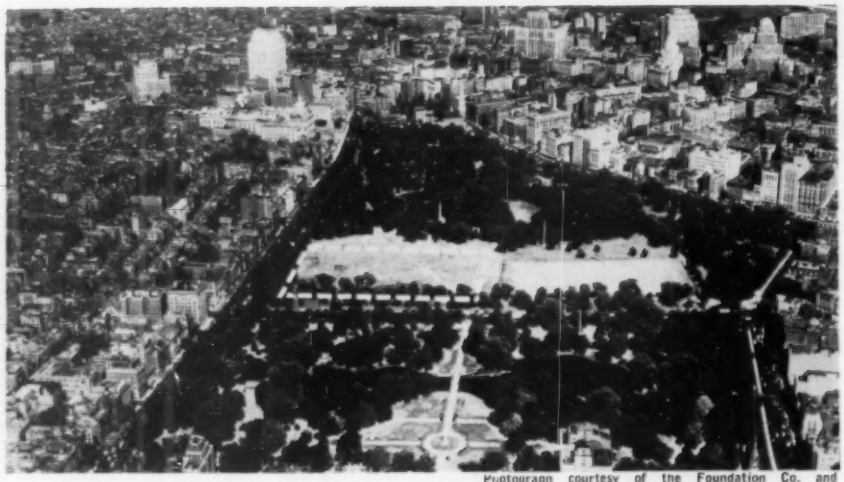
Please send me a copy of the new General Electric *PREFERRED LIGHTING* Designer's and Buyer's Guide, GEA-7100, with descriptive, application, and ordering data on the complete line.

Name _____

Company _____

Address _____

City _____ State _____



A free bus service will circle the Common, carrying parkers to the State House (domed building, upper left), the business and financial area (top center) and the shopping and theatrical districts (right center and right).

Photograph courtesy of the Foundation Co. and Welton Becket, architect, both of New York City.

1450 Cars to Park under Boston's Common

By **EDMOND T. KEENAN**
Senior Supervising Engineer
Ford, Bacon & Davis
New York, N. Y.

The parking garage under Boston's historic Common is in the digging stage. The 300-year-old 48-acre park will look the same, but 1,450 parking spaces will have been added to Boston's colonial streets.

About two thirds of Boston's taxable real estate, business, financial, shopping and amusements, front these streets. They do not provide sufficient width for moving traffic, yet they must also take curb parking. Widening the streets is not feasible.

Two years ago the Commonwealth of Massachusetts declared that the parking of motor vehicles in the streets of Boston "has so substantially impeded free circulation of traffic as to constitute a public nuisance" and "that this parking nuisance is not capable of being adequately abated except by the construction and operation of a garage under Boston Common." The state then created the Massachusetts Parking Authority (MPA) to construct, operate and maintain the Common garage.

Edmond T. Keenan

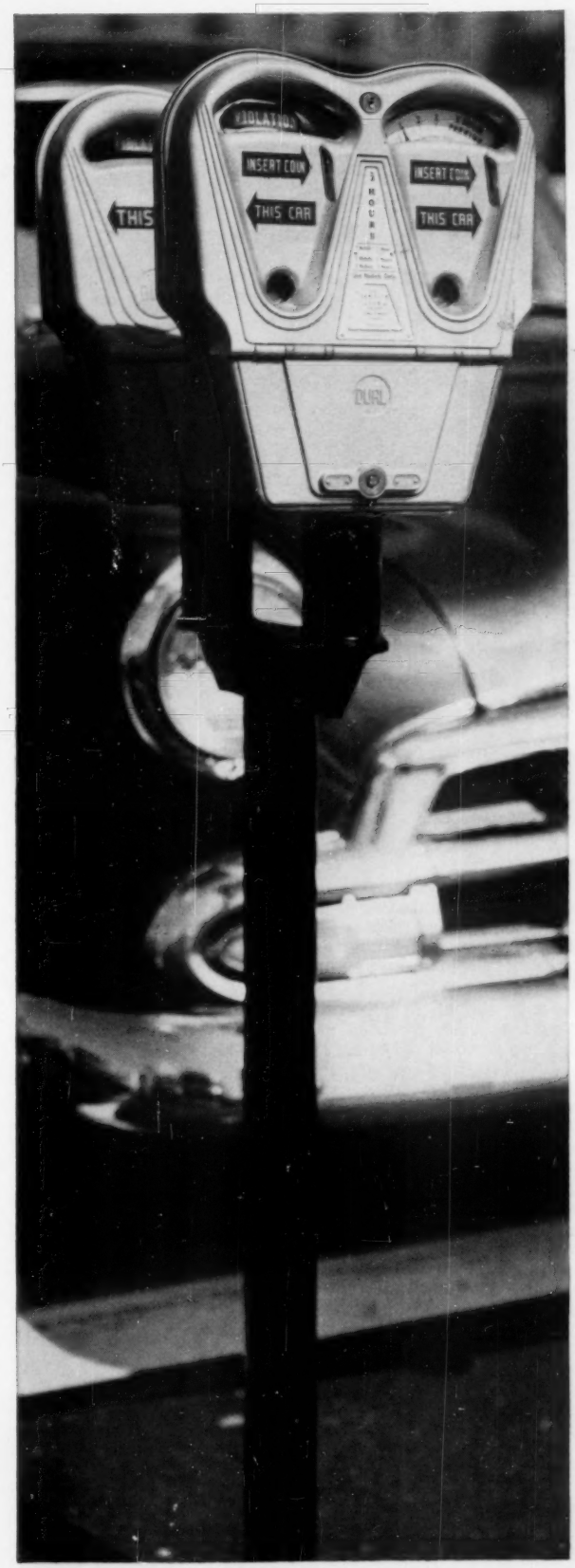
The MPA had preliminary plans for the garage prepared by the Foundation Company, engineers-builders, and its associates, Welton Becket, architect, and Cosentini Associates, mechanical engineers. After these were completed the Authority retained Ford, Bacon & Davis, Inc. to prepare a feasibility study and report and to serve as consultants on functional design during construction and to act as consultants on operation thereafter.

To estimate the usage of the proposed garage a number of specific questions had to be answered: How many cars are now being parked in downtown Boston during the various hours of the day, where are they parking and how long do they stay? Which local garages and parking lots would be a source of competition to the Common garage? Boston's major stores are open Monday and Wednesday evenings, thereby creating a different week night pattern from Tuesday, Thursday and Friday nights. The adjoining Beacon Hill area, primarily residential, requires overnight parking during the entire week and all day parking on Sunday. From hourly counts on different days of all vehicles parked at curbs and in off-street lots and garages, as well as half-hourly checks on the length of stay of cars parked on the streets immediately around the Common, weekly patterns were developed.

It was immediately apparent that the garage was badly needed. All existing parking space was found to be filled 60 to 90% of the time during the business day, and hundreds of cars were illegally parked at the curb. In the retail shopping area, for example, more than twice as many cars were curb-parking illegally as legally. Double and triple parking was found to be common. A convenient garage would, of course, eliminate the need for police forbearance towards such conditions.

A thousand of the existing off-street parking spaces

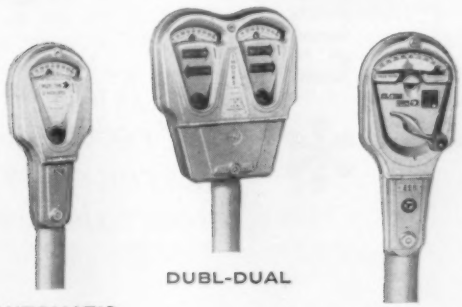
(Continued on page 137)



SLASH INSTALLATION COSTS UP TO 50% WITH DUBL-DUALS

You save up to one-half on installation costs when you buy Rockwell Dubl-Dual parking meters, because two mechanisms are built into *one* case. Besides saving 23% on the initial cost, only half as many meter stands are required . . . on off-street lots you can put four meters on a single stand (see photo at left). This also cuts collection and maintenance time greatly and frees personnel for other revenue-producing jobs.

Dual, with 25 years of know-how, can also give you expert advice and assistance on street-marking, to accommodate more cars . . . on-street or off-street. For information on Rockwell's complete line of automatic and manual parking meters, write: Dual Parking Meter Company, Subsidiary of Rockwell Manufacturing Company, Pittsburgh 8, Pa.



AUTOMATIC DUBL-DUAL MANUAL

The only complete line of automatic and manual parking meters

DUAL PARKING METERS
another fine product by
ROCKWELL

* CONVERT TO MERCURY IN 1 MINUTE

with New Precision mercury Convertalume

It's a fact. One minute is all it takes to convert any NEMA standard incandescent fixture to mercury. Older fixtures can be converted at the pole with the bracket-mounted Convertalume in just a few moments more.

Either way, the whole conversion job is a simple twist of the wrist. No need to cut wires, buy new fixtures, or remodel old ones. Just slip the Precision Mercury Convertalume into any locking type incandescent receptacle and screw in the mercury lamp. For automated mercury multiple lighting, simply add the fail-proof Precision Multiple Control.

Now every community can enjoy the safest, savingest street lighting ever developed without replacing a single incandescent fixture. Lightest in weight of all ballast combination units, and lowest in cost all three ways — equipment, installation and maintenance — the Precision Mercury Convertalume is also the most attractive unit of its kind. In dimension, satin finish aluminum, and shape it's an inconspicuous matchmate for every standard incandescent fixture on your streets, highways, parkways and whiteways.

Why not give your community the efficiency and economy of mercury conversion — now? Ask your Precision automated light specialist for details on the Precision Mercury Convertalume and Precision Multiple Controls — or write for complete data.

pm/c PRECISION MULTIPLE CONTROLS, INC. 233 Chestnut Ridgewood, N.J., U.S.A.

(Continued from page 134)

are on parking lots, which are more or less temporary. Commercial construction on them would decrease available parking space while increasing parking demand.

With a main purpose of clearing the streets of the parking nuisance, the garage would have to serve a wide area encompassing the retail, business and theatrical sections, the shopping district, the State House and nearby Beacon Hill, where many of the city's oldest families have their homes. This area, extending 1,200 to 1,600 feet from the garage entrances and exits, is farther, according to accepted standards, than most shoppers and short term parkers are willing to walk.

Ford, Bacon & Davis recommended a free bus line between the garage and its areas of service. Vehicular access to the garage is easy compared with access to the business and shopping areas. The parker would rather park in the Common garage, it was felt, and be driven in a bus through the narrow winding streets to his destination rather than fight his way through these streets in the probably vain hope of trying to park close to where he is going. The parker will be able to travel without cost on the bus, from place to place in the business area or from one store to another on a shopping expedition.

Buses are scheduled to operate on an 8-minute headway during the day, 10 to 15 minutes evenings and every 30 minutes from midnight to 7 a.m. Sunday service will also be at 30 minute intervals. The projected operating cost of the bus service, $109,500 annually, will be part of the estimated operating cost of the garage.

Parking Fees

The proposed fee schedule for the garage is competitive in comparison with other garages in the area. Short-term parkers will be charged 40 cents an hour for each of the first and second hours and 25 cents an hour thereafter, with a maximum of $1.85 for 8 a.m. to 6 p.m. weekdays, and 50 cents for midnight to 8 a.m. A monthly fee of $30 is planned for overnight parkers, 6 p.m. to 8 a.m., together with 24-hour parking on Sundays and major holidays.

It is anticipated that the major sources of revenues will be from the short-term rather than the all-day parkers. Of the $1,375,000 annual gross revenue the garage should produce at the peak of operations, nearly $800,000 is expected to come from short-term parkers.

In its first year the Common garage should produce $860,000 gross revenue—almost 2½ times its projected operating expenses—and one million dollars the second year. Thereafter revenue should increase to a peak in the tenth year.

Under the Common

The garage will have three levels and occupy an area 550 feet along Charles Street and 320 feet along Beacon Street at the northwest corner of the Boston Common.

At each of the two entering lanes there will be a "ticket spitter" which will automatically eject a time stamped ticket for each motorist as he passes over a treadle.

After parking his own car, the motorist will either proceed to the bus waiting room, located on the middle level or ascend to the street or the Common.

To retrieve his car, the motorist will proceed to his floor, get his car, present his ticket at the booth of any of three exit lanes and drive up a ramp into Charles Street.

On the engineers' reports, the Parking Authority issued $9.6 million of 5¼% Boston Common Garage revenue bonds to mature in 2000 A.D. The actual construction cost is estimated at $7.5 million, with the balance covering contingencies, interest, and expenses. The bonds were quickly sold out through John Nuveen & Co.

The Massachusetts Parking Authority has required contractors to preserve the original surface of the park, which up to now had been undisturbed since Colonial times. Precise topographic maps were prepared and the soil will be put back to the original contours when the job is finished. ◄◄

How's Your Speedometer?

The Hillside, N. J., Police Department and the Safety Council decided to check against an accurate police car radar, the speedometers of cars on Central Ave. on May 7 between 1 and 4 P.M. No record would be kept of names or license numbers. It would be educational.

A sign told drivers to maintain 30 mph. Of 301 cars tested within three hours, the speedometers checked ran from 13 at 24 mph to 4 at 34 mph. The largest group was 69 cars at exactly 30 mph. Next largest group was 67 cars at 28 mph.

The committee which worked out the program and is planning another one for October, consists of Police Commissioner Louis Dischler, Chief of Police Ernest Voelk, Magistrate Henry Goldhor, Safety Council Chairman Frank Weber and Mayor V. William DiBuono.

Each driver was given a card with his speed shown.

HENRY GOLDHOR
Counsellor at Law
Newark, N. J.

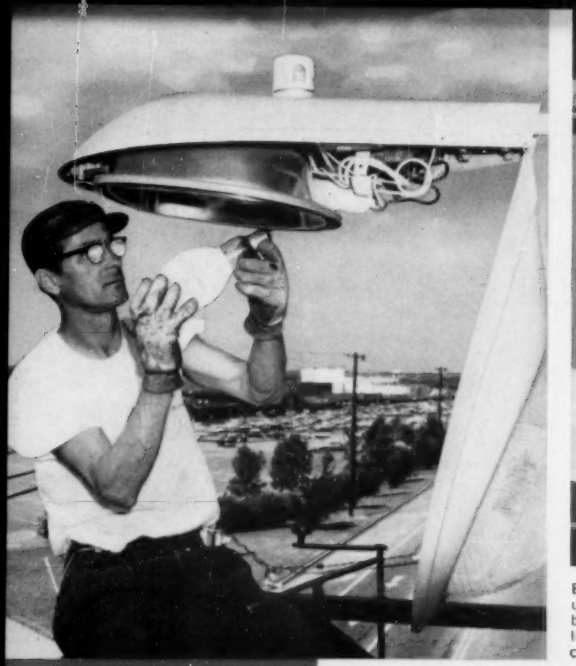
Police Chief Ernest Voelk points to test sign in front of car operated by Police Commissioner Louis Dischler.

Cleveland Electric Illuminating Co. headquarters, the modern Illuminating Building on Public Square.

FISHER-PIERCE INDIVIDUAL-LAMP CONTROLS REDUCE CONVERSION COSTS, CLEAN UP SERVICE POLES IN CLEVELAND

Suburban Clevelanders are seeing more and more individual lamp controls on their streetlights, including Fisher-Pierce Series 6600A Controls, as The Cleveland Electric Illuminating Co. voltage conversion program continues through its second year. CEI found that modernizing the streetlighting system by changing to individual photoelectric control is a natural and highly practical part of distribution conversion. It eliminates the need for constant current transformers, oil switches and time switches, plus extra wire, insulators and hardware for streetlighting circuits, and new crossarms to isolate them from distribution lines. Conversion requires only connecting the streetlight into existing 120-volt secondary lines, replacing the lamp and installing a hood that meets EEI-NEMA standards — Fisher-Pierce controls also conform to the standard.

The new installation may be checked quickly, because of the short time delay in the controls. IL transformers, oil switches, time switches, constant current transformers and series wire can be removed, simplifying future pole work and improving neighborhood appearance. All of this in addition to dependable, automatic switching of streetlights, with light provided whenever it is needed.

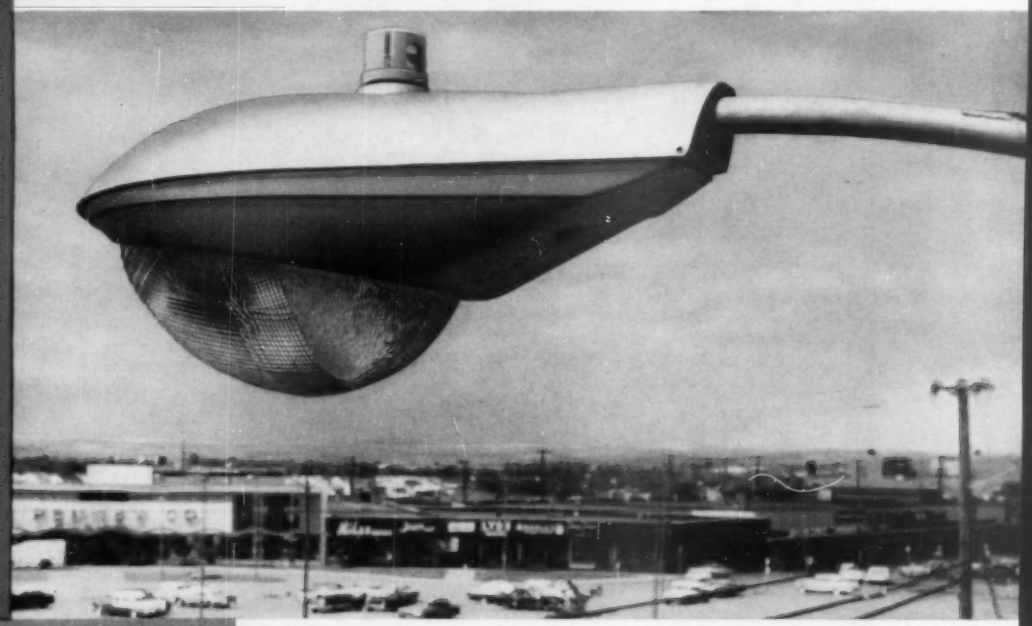


Easy calibration of F-P and other controls, using the Fisher-Pierce Series 6100 Calibrator. As the operator gradually varies the light intensity, a front-panel light indicates control operation and a foot-candle meter shows the operate value. CEI finds the Calibrator useful, particularly for acceptance testing and checking controls after repairs.

Short time delay in Fisher-Pierce Model 6600A control speeds up checking of new mercury vapor lamp (above). CEI reduces outage calls by replacing groups of lamps after a set number of burning hours.

Opening of new Southgate Shopping Center (right) reflects rapid growth in the territory vigorously promoted by Cleveland Electric Illuminating Co. as "The Best Location in the Nation"

Fast checking of a new F-P controlled installation (below) by covering the control with a homemade light shield. The short time delay in Fisher-Pierce Controls effectively prevents false turn-off by lightning—no cases have been reported to CEI.



For complete design information and specifications on Series 6600A controls and the Series 6100 Calibrator, write The Fisher-Pierce Co., 94 Pearl Street, So. Braintree 85, Massachusetts.

FP

FISHER PIERCE

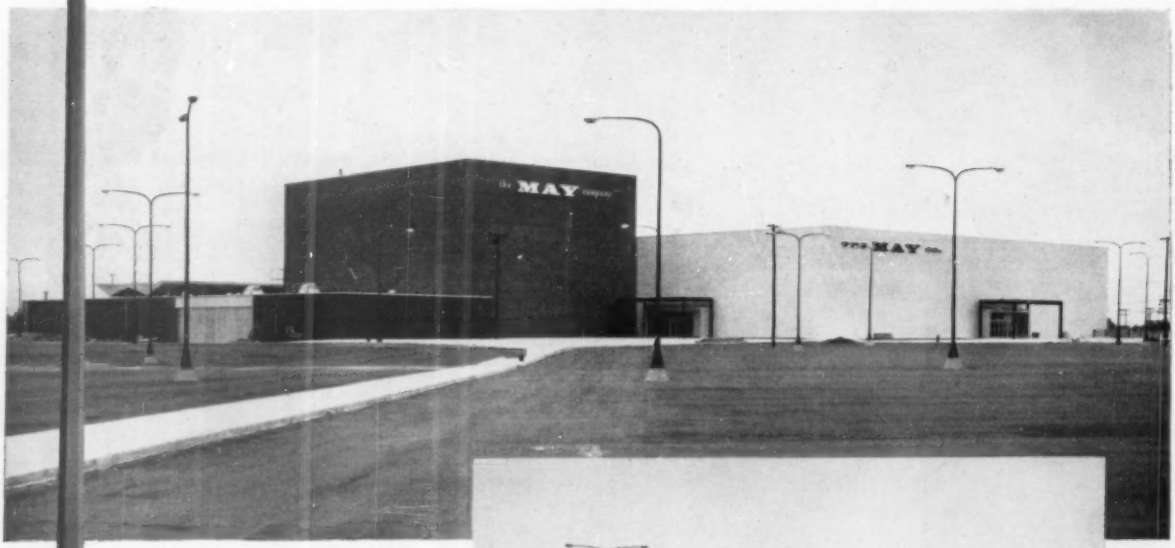
PHOTOELECTRIC LIGHTING CONTROLS

AN AFFILIATE OF SIGMA INSTRUMENTS, INC.

Modern stores, like modern cities

prefer the distinctive design of—

Millerbernd *lighting standards*



Single and Twin-Arm Millerbernd standards light the 2,000-car parking lots and the approaches to this ultra-modern suburban department store. Millerbernd High-Strength steel construction with heavy tapered bases can take the punishment of parking lot services.

You can be sure that the style-conscious May Company, one of America's foremost retail organizations, would place a high value on *harmony in design*. Note in the above photos of their beautiful new store in suburban Cleveland Heights how the graceful, clean and simple lines of Millerbernd lighting standards, on parking lots and approaches, *complement the architectural style* of the building itself.

In your city, the classic, modern design of Millerbernd lighting standards will enhance the appearance of any new developments . . . and markedly up-date the appearance of all streets and thorofares. Their modern styling makes an immediate and lasting impression on citizens and visitors *that here is a progressive city.*

Write for booklet OTA
Describes Millerbernd Elite Standards and four other modern styles. Shows new developments in fluorescent-type standards.

Millerbernd
MANUFACTURING CO.
WINSTED 1, MINNESOTA

Shaker Heights, one of Cleveland's deluxe suburbs.

Public Transport in Five Great Metropolitan Areas—Part III

The most important public transit in Cleveland is the municipally owned Cleveland Transit System. It may be the most efficiently operated municipal transit system in the United States. Donald C. Hyde, General Manager, believes that speed is the primary element in holding transit patronage and attracting new riders.

Cleveland, "best location in the nation," stretches for nearly 30 miles along the shore of Lake Erie and ten miles inland. The Cleveland standard metropolitan area is 688 square miles and has a population of about 1,700,000, of which 950,000 live in the city.

Because Cleveland is a heavy-industry city, its downtown working population is not as great as that of commercial cities such as Boston or San Francisco. However, 285,000 persons enter downtown on an average weekday, 47% by public transit.

In 1949 the voters of Cleveland approved a charter amendment authorizing the Cleveland Transit System to borrow $29,500,000 from the Reconstruction Finance Corporation to construct the rapid transit. Total cost including cars and shops was about $37 million.

The CTS Rapid, as the route is commonly called, is a 15-mile rail line having 14 stations, and is more of a commuter railroad than a heavy-duty subway because of a very great peak-hour volume and relatively light base, and the long distances between stations. It is said to be the fastest on the continent.

Because there is only one station in the downtown area, only 20% of the people entering downtown on transit use the rapid transit. If a proposed downtown distribution subway were to be constructed, the number of daily riders probably would increase from the present 60,000 to over 100,000. A downtown distribution subway was approved by the voters of Cuyahoga County in 1953 but construction has not been approved by the county commissioners.

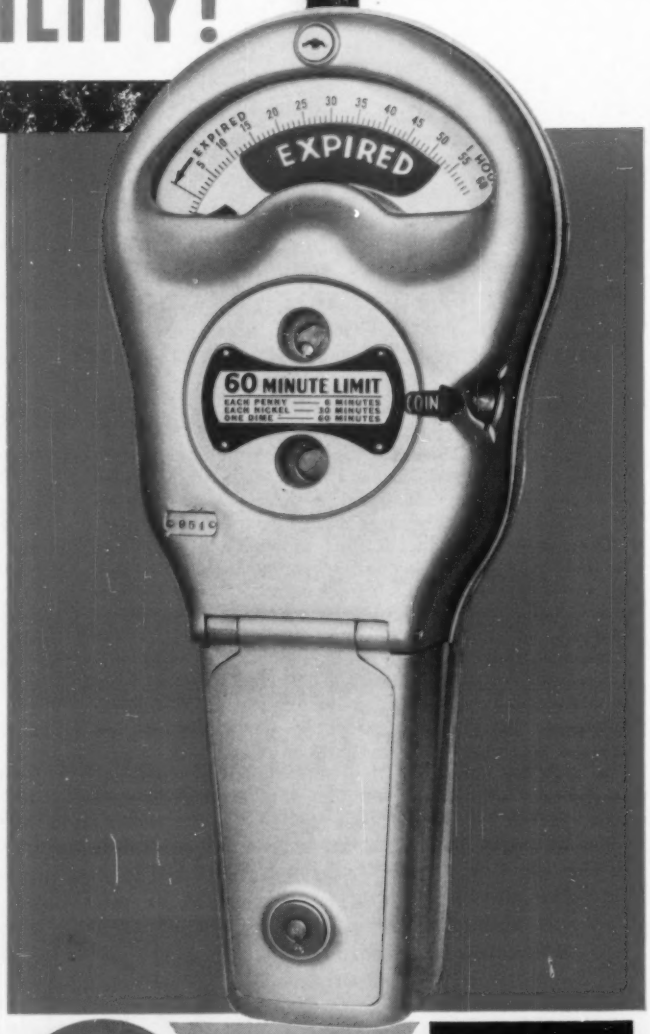
Service on the rapid transit is provided by high-level platform cars which are operated in trains of

(Continued on page 143)

For the source of this analysis, see the first installment on page 125 of the June issue of THE AMERICAN CITY.

Feeder buses are important in making rapid transit successful.

GIVE YOUR CITY PARK-O-METER PROFITABILITY!



Your city's parking meter system can be a profitable operation with Magee-Hale Park-O-Meters.

Park-O-Meters are automatic and accurate. They can be adjusted to meet every need.

Let a Park-O-Meter parking expert call on you to show you how you can have a profitable parking meter system.

LOW MAINTENANCE

. . . costs with Park-O-Meters. No operating parts are exposed to the weather or vandals. Rate ring is adjustable to permit time, rate and coin changes *on the site* . . . no shop overhaul necessary!

REDUCE ENFORCEMENT COSTS

. . . with Park-O-Meters. Large "expired" signal is visible from street by mounted patrolling officer . . . no sidewalk checking necessary.

- Instant, on-site service
- Single coin slot accepting any combination of nickels, dimes, pennies, quarters or tokens
- No exposed working parts

P O M

MAGEE-HALE PARK-O-METER COMPANY
3909 Willow Springs Road • Oklahoma City, Oklahoma

LEADING THE INDUSTRY FOR 25 YEARS

(Continued from page 141)

one to six units. During rush hours, four- and six-car trains are operated every 2½ minutes on the West Side line, and four-car trains on the East Side line every 5 minutes.

Fringe parking at rapid transit stations has been helpful in attracting riders. About 5,000 parking spaces are available at seven stations, more parking than any other rapid transit city. Most of the parking areas on the West Side are filled to capacity by 8 o'clock in the morning.

Feeder buses are important in making the rapid transit successful, because the distance between stations is too great to allow much pedestrian traffic. They also act as extension routes to tap those areas not directly served by the rapid transit. Feeder bus connections are arranged so that buses connect with specific trains during the off-peak hours.

An interesting feature of the CTS Rapid is the so-called "kissing loop." This is a loop area inside the rapid transit station which makes it possible for the wife to drive her husband to a rapid transit station, kiss him goodby, and drive home while he boards a train for his downtown office. This arrangement is working out well, as evidenced by the long row of cars waiting to get inside the loop area during the morning and evening rush hours. It provides the transit system the economy of reducing the feeder bus demand, which is expensive, and also reduces the amount of parking which is required at stations.

Shaker Heights, a wealthy suburb east of Cleveland, also operates a rapid transit system. It consists of two divisions—the more densely populated Van Aken division and the Shaker Boulevard division.

Shaker Heights is truly "the town that transit built." It was part of a land speculation by the Van Sweringens. In developing their community, they decided that an ordinary trolley line would not encourage settlement. They therefore designed a rapid transit line direct to Cleveland Union Terminal. When the lines were built in 1920, there were only 3,000 people living in Shaker Heights. Today there are 40,000.

The Shaker rapid transit became municipally owned in 1944, when the city purchased the route from the banks which held it since the Van Sweringen Co. went into receivership during the depression.

Shaker Heights has many two-car families, but this actually has helped the rapid transit system because it permits motorists to provide their own feeder service to rapid transit stops. Parking spaces are provided at many stations and the Green Road terminal of the Shaker Boulevard division has space for over 600 cars.

The Shaker rapid transit is much better known throughout the country than the CTS Rapid. The Shaker rapid has stimulated land development along its tracks and many people are willing to pay a premium price to live near the right-of-way. ◄◄

New York's Meter Maids Now at Work

Improved motorists' understanding of the parking regulations and their purposes was the first assignment of the Traffic Department's new parking meter attendant force of 100 women. They distributed a pamphlet entitled "Assure Your Parking Place." It tells motorists that by voluntarily observing the time limitations of parking meters, they will avoid summonses. During 1959 over 75,000,000 motorists used the 52,000 metered-parking spaces on New York City's streets. The two major points made in the pamphlets are:

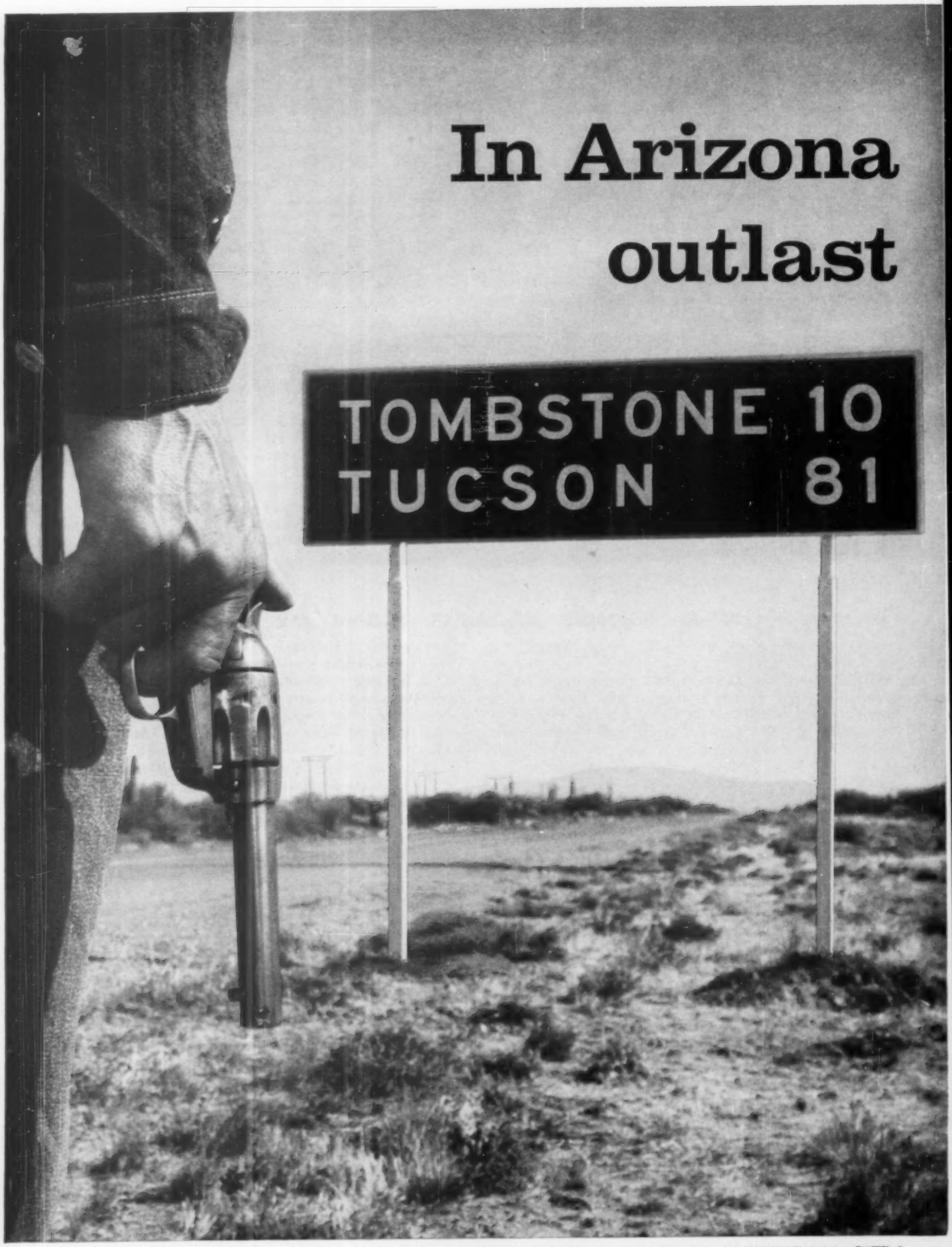
1. A motorist must deposit a coin immediately on parking his vehicle unless he chooses to use any unexpired time left by a previous parker.

2. Feeding curb meters is illegal. A motorist may not park at any curb meter for a consecutive period of time longer than that permitted in the meter zone, nor deposit any additional coins to extend the time.

The vast majority of motorists recognize the need to follow good parking practices, to observe "time limitations" in order to give their neighbors a chance.

However, the pamphlet states, a small minority of "meter hogs" disregard the rights of others and violate the law, causing double parking and cruising. ◄

The review of the New York City Department of Traffic parking meter attendant force by Mayor Robert F. Wagner and Traffic Commissioner T. T. Wiley took place on June 1st, 1960. The cars are Plymouths.


In Arizona
outlast
TOMBSTONE 10
TUCSON 81

overlaid plywood signs metal 3 to 1

SIGN REPLACEMENT WAS A REAL PROBLEM IN ARIZONA until the Highway Department switched to plywood. Trigger-happy motorists had been taking pot shots at metal signs. This led to rust, deterioration and often dangerously reduced legibility after only a few months of use. Then performance tests showed overlaid plywood's life expectancy was at least three times that of metal.

Now Arizona uses overlaid plywood for 85% of its signs. Vandals still shoot at them. But plywood stands up to both deliberate and accidental abuse without losing legibility. Bullets go right through without shattering the sign face. There's no corrosion problem; repairs are made quickly.

Overlaid plywood withstands Arizona's weather, too, with its extremes of heat, rain and snow. The plywood is completely waterproof, and the smooth, durable plastic-like surface makes an ideal base for reflectorized material.

Besides saving on maintenance and replacement, plywood signs are simple and inexpensive to fabricate. In Arizona's sign shop, a production-line process is used to make about 70 different basic signs, most with reflectorized legends.

FOR MORE INFORMATION (detailed specifications, application data, etc.) write:
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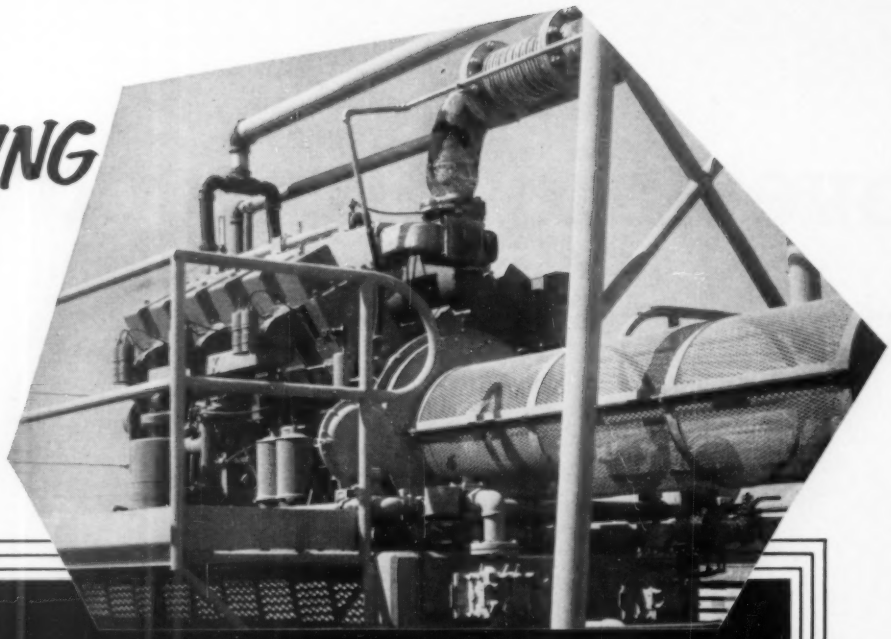
TACOMA 2, WASHINGTON
—an industry-wide organization devoted to research, promotion and quality control
Always specify by DFPA grade-trademarks

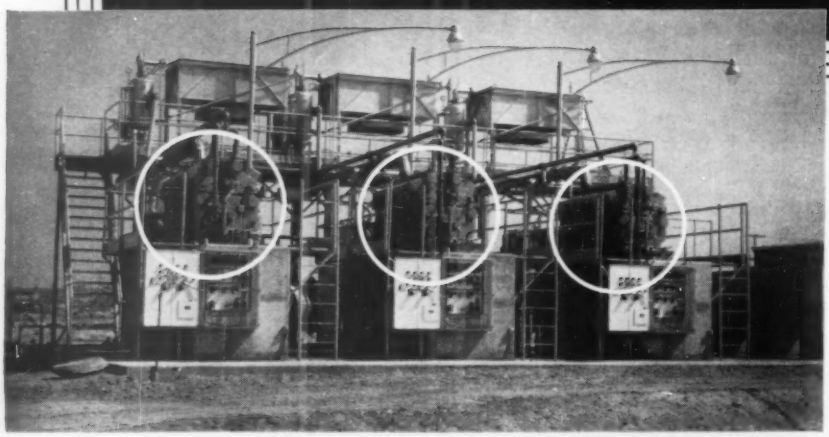
DFPA TESTED QUALITY

Plywood signs on Arizona's highways not only resist abuse from vandals and a rugged climate, but are attractive and easy to read. Fabrication in the state's sign shops is simplified because standard-sized panels of plywood are easy to store and easy to cut to required sizes and shapes. Above, reflectorized letters are applied to an overlaid plywood sign.

PROTECTING
outfall
basin
fluid
level



three CLIMAX V-122 ENGINES power outfall booster pumps



At Orange County, California, Sanitation District, Plant 2, three *Johnson* vertical flow centrifugal type outfall booster pumps are powered by three V-122 *Climax* 3232 cu. in. engines: 12-cyl., 60° V-type, 7″ bore x 7″ stroke. Engines are equipped with ebullient cooling, full automatic starting and speed regulation; burn sludge gas, with natural gas for standby, and drive through *Western* BSV-144 right angle gears, ratio 2.1304:1.

In the Orange County treatment plant, ordinarily the treated sewage flows by gravity from the plant through a 3000 ft. long outfall conduit to the ocean. But an increased inflow to the plant, or a high tide, or a combination of both, causes the outfall forebay fluid level to rise. At a predetermined point Pump Unit No. 1 starts, warms up, then goes on the line. Further increases in fluid level bring Pump Units No. 2 and No. 3 into action, when necessary. The three Climax Engine powered Pump Units can handle maximum flow at the highest tide, and then some. With a decrease in outfall forebay level, the operation reverses—the units dropping off as need diminishes. For sewage treatment plants—seven rugged Climax Engine models . . . 12, 8, and 6 cylinders, burning sludge gas, or capable of operation on natural gas, butane, gasoline, or any combination . . . ranging from 100 hp to over 600 hp. Write for engine bulletins.

CL-118

CLIMAX ENGINE MANUFACTURING CO. • DIVISION OF WAUKESHA MOTOR COMPANY
FACTORY—CLINTON, IOWA

Milwaukee Purchasing

By **A. L. LEHRBAUMMER**
City Purchasing Agent

The Central Board of Purchases of the City of Milwaukee, Wis., consists of the following members all serving in an ex-officio capacity: the mayor, as chairman, the city comptroller, the budget supervisor, the commissioner of public works, the president of the common council, the chairman of the common council finance-printing committee and the superintendent of the water department.

The Board has full power to purchase or to provide for the purchase of all materials, supplies and equipment for the use of all departments, boards or commissions comprising the city government. On all purchases in excess of $5,000, official advertising is required. Purchases below the statutory limitation are handled by the staff.

An Executive Committee consisting of the commissioner of public works as chairman, the city comptroller, the superintendent of the water department and the budget supervisor (alternate), when directed by the Board, served in an advisory capacity to the city purchasing agent.

A Standards and Specifications Committee, consisting of the executive committee and the city purchasing agent, simplifies and standardizes materials, supplies and equipment whenever practicable. It also reviews with the prospective bidders tentative or controversial specifications.

The City Purchasing Department is divided into five divisions as follows, with the number of employees shown in parenthesis:

1. **Buying (7)**
2. **Clerical (9)**
3. **Accounting (2)**
4. **Central Reproduction (10)**
5. **Stores (9)**

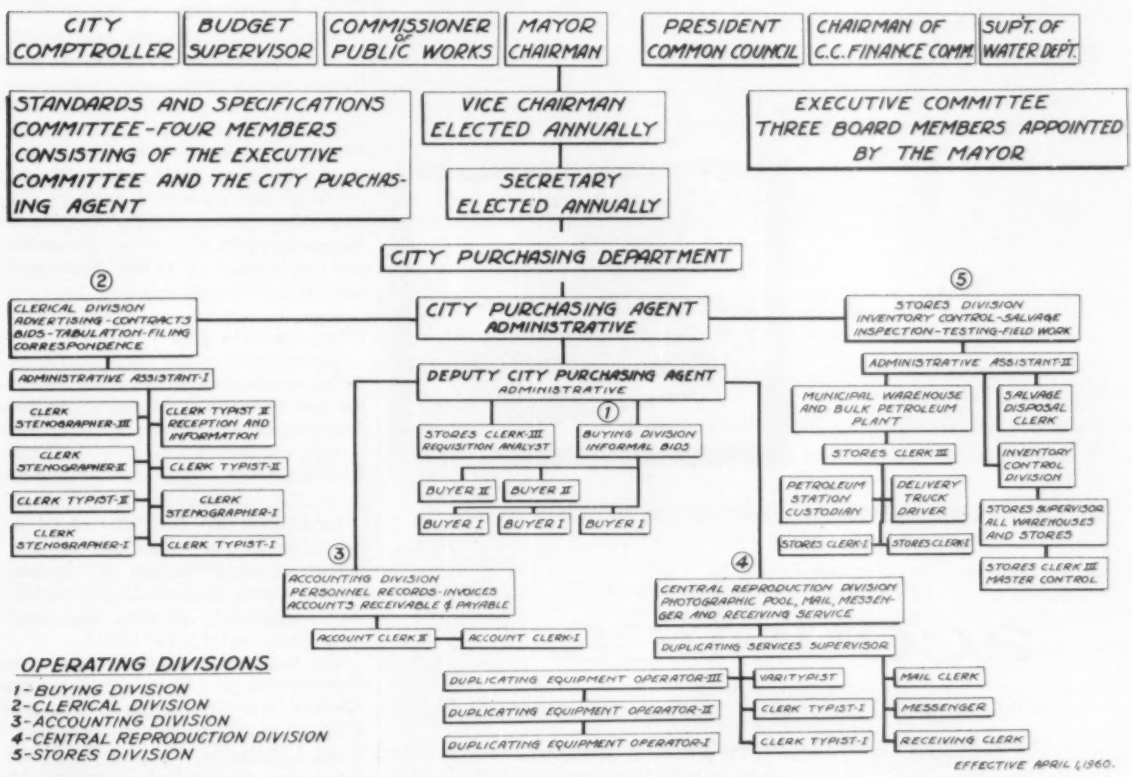
The total budget appropriation for 1959 was $138,071. Total purchases in goods and services were $10,552,375, at a cost of 1⅓%.

Noteworthy was the selection of Howard A. McMillan as new deputy city purchasing agent after a nation-wide examination conducted by the City Service Commission. Fifty-four applicants competed, 18 from out of town. Eleven were successful, of whom four were from out of town, and were called in for the oral interview. Mr. McMillan began his duties on June 6, 1959. He was formerly with the New England District of the U. S. Corps of Engineers.

This Department continued its relentless policy of reporting all instances of identical bids to the Federal Trade Commission for their investigation. During 1959, liquid chlorine and rock salt were so reported.

In October, Joseph W. Nicholson,

(Continued on page 149)



Purchasing looks like big business in Milwaukee but costs only 1⅓% of the total purchases.

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new speed,
new efficiency in ultrasonic cleaning

ACOUSTICA'S NEW TRANSISTORIZED 20-KC LINE

Ultrasonic cleaning takes on a new dimension with Acoustica's fully transistorized electronic generators for use with "Multipower" transducers and tanks. A completely different operating principle eliminates all tuning, adjustments and meter readings and obtains maximum power from all transducers, even when several are used in a single cleaning tank.

Speed and efficiency are greatly increased, for warm up time is completely eliminated... cleaning can start the instant the switch is turned on! In addition, the new transistorized unit automatically compensates for changes in both load and liquid level. Solid-state circuitry, combined with plug-in modular design, assures maximum reliability.

The new fully transistorized generators can be used either in special systems or with Acoustica integral tank-and-transducer combinations. Learn how this new dimension in Ultrasonic Cleaning can cut both production cleaning costs and rejects.

WRITE TODAY FOR COMPLETE OPERATING SPECIFICATIONS.

acoustica

ACOUSTICA ASSOCIATES, INC.
10400 Aviation Blvd., Los Angeles 45, Calif.
600 Old Country Road, Garden City, N.Y.

(Continued from page 147)

former city purchasing agent was subpoenaed to testify at a suit by the Federal Trade Commission against five pharmaceutical manufacturers, an outgrowth of the City of Milwaukee's complaint on identical bids on poliomyelitis (Salk) vaccine. While all of the defendants were acquitted of any conspiracy in price fixing, full competition now prevails. In 1957, we received identical bids from eleven firms at $5.70 for a 9-cc vial. Bids received for our 1960 requirements ranged from $2.50 to $3.44 with fourteen bids being submitted. The reduction of $5.70 to $2.50 amounts to 56%.

A complaint was again filed calling the Commission's attention to the sales efforts of a western paint producer whose stereotyped sales letter to all of the department heads of the city, implying that there were distressed stocks in local warehouses, appears each spring. Upon our previous inquiry to their home plant in California, we were unable to establish the quality of the paint and upon our request for an analysis, they were evasive. This was brought to the attention of other public buying agencies during regular meetings of our state group.

City Furniture

With the completion and occupancy of the Municipal Building, a Receiving Department was established in August 1959 under the Central Reproduction Division. All deliveries to the City Hall or Municipal Building will henceforth be made at the receiving dock in the new Municipal Building. Contracts for supplying the office furniture and equipment for the Municipal Building were awarded as follows:

Office furniture and equipment	**$70,462**
Office seating equipment	**22,809**
Vertical filing equipment	**15,943**
Supplementary furniture and equipment	**7,295**
Drafting tables	**12,069**

Additions to the contract, as provided in the specifications, resulted in supplemental orders and together with incidental and specialized equipment, the total amounted to approximately $300,000.

On the recommendation of this department, the Board of Estimate allowed the Mosler Safe Co., 320 Fifth Ave., New York, and their local distributor, Toepfer Safe and Lock Co., to conduct a survey on the need for fireproof equipment in

the various departments to insure the safety of valuable current records against fire loss. This survey was approved and begun in September on a gratis basis and without any obligation to the city. Because of recent disastrous fires in public buildings, notably the Michigan State Capitol at Lansing, the Chicago City Hall and the Pentagon, this study was considered very timely. ◄◄

Horizontal Street Names Better

A little more than two years ago the Town of Hempstead, Long Island, N. Y., began to install aluminum street signs in place of the familiar wooden posts. More than 4,500, made by the Traffic & Street Sign Co., Newark 5, N. J., have risen since October 21, 1957.

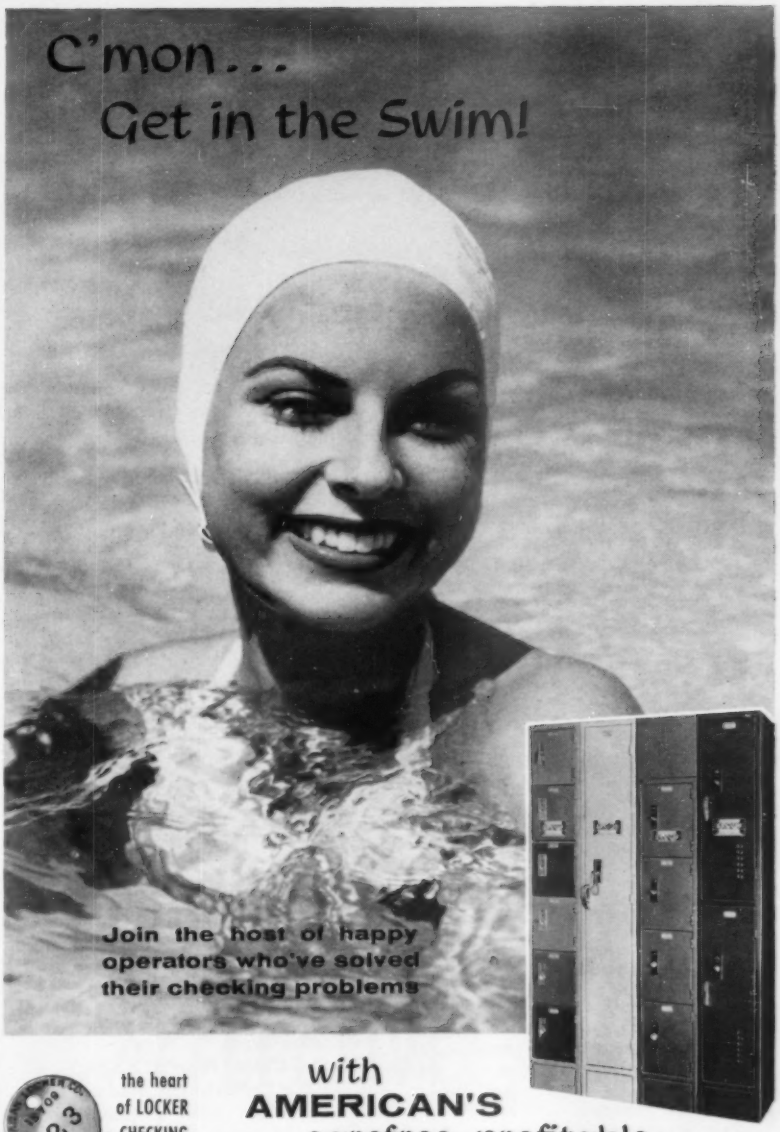
"Public reaction to these new aluminum signs with the Scotchlite reflective street names has been overwhelmingly favorable," says Supervisor Edward P. Larkin. "Residents have admired their appearance, their readability, especially at night, and having the street names horizontal rather than vertical as they were on the wooden posts.

"Motorists had difficulty reading the names on the wooden posts, especially the long ones such as Red Maple Drive South. The street names on the new signs are all seven feet above the ground, just right for motorists, whereas the street names on the wooden posts started six feet above the ground and sometimes, in the case of long names, went almost to the ground."

Among the communities which have received the new street signs are Levittown, East Meadow, Franklin Square, West Hempstead, Garden City South, North Wantagh, North Bellmore, North Merrick, Wantagh, Oceanside, and Seaford.

The cost of maintaining these new signs saves the taxpayer money, according to Town Engineer Arthur Herberger. "When a wooden sign is defaced we have to take it out, transport it to our shop, repaint it, then bring it back and put it into the ground. When an aluminum sign is defaced it is a simple and inexpensive matter to merely replace the name-plate without removing the entire post.

"The cost of installing the aluminum signs is also decreasing and the town is saving money through salvaging the wooden posts." ◄◄



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- Over 50 locker sizes available in a wide choice of colors.

*T. M. — American Locker Co., Inc.

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OLDEST AND LARGEST COIN LOCK MANUFACTURER

COIN LOK* LOCKER CHECKING SYSTEMS

Plastix 6x6 blocks for crosswalk on Poplar Street near City Hall; stop bar at left is yellow Plastix.

This is Poplar Street, the street that got well.

Poplar Street, Yardstick of Macon's Revival

By **B. F. MERRITT, Jr.**, Executive Director*
Macon Area Development Commission, Macon, Ga.

One of a city's finest heritages is a wide business street. It has potentialities. If traffic is not excessive, cars can continue to park in the center. Or more lanes can be provided. The street lighting can be spectacular. A wide street is what Macon, Ga., had to work with.

Until three years ago, Macon's income from Poplar Street had dwindled to a trickle. Poplar Street was as dead as the ancient pecan trees drooping in the grassless parkway down its center.

That's all changed. Stores are undergoing a face-lifting. New business establishments are being attracted by the more numerous shoppers. New traffic signals, traffic islands, new street lighting, traffic signs and permanent reflectorized pavement markings paid the highest dividend of any funds the city expended. These improvements went far toward revitalizing the downtown area.

Traffic Chief John H. Knight of our Police Department, had a king-sized problem with Poplar Street in the old days. He tells me he finds that modern markings keep vehicles in proper lanes, and cleanly marked pedestrian crosswalks reduce jaywalking. "We're getting far greater utilization of the street," he says, "with a marked reduction in accidents and congestion."

For the past six years, Macon's general budget has averaged $3,250,000, not including the operational budget of the water system or the 550-bed City Hospital. Revenue to cover the budget is derived principally from ad valorem and business license taxes. With a full complement of municipal services, the budget over the years provided little for capital outlay.

Since the city was committed to complete the financing of the $8-million City Hospital and a $4-million sewage disposal plant, it could anticipate not more than $20,000 to $30,000 a year from the general fund for financing the general improvement program, though it was sorely needed. In 1956, the voters approved a general obligation bond issue of $1,800,000 to put the general program into operation. Poplar Street is only one phase of the improvement but the one that converted a bad headache into a fine asset for the city.

The street is four blocks long and 145 feet wide. The parkway in the center crowded traffic into two narrow, rough streets, made virtually impassable by vehicles parked parallel to the curb. Street lights were old and dim. Traffic lights and pavement markings were nonexistent.

The park was compressed into a neat grass strip with attractive low shrubbery and two rows of Duncan Miller meters. Median strips parallel to the parkway strip, provide 45-degree parking plus a lane for vehicles searching for parking space. Between median strip and sidewalk are two lanes for moving traffic, plus a third lane for parallel-to-curb parking. Remodeling added two lanes for moving traffic and 134 new parking spaces.

Traffic lights were installed, timed

(Continued on page 153)

* Mr. Merritt is a former Mayor of Macon, Ga., and a past president of the Georgia Municipal Assn. It was while he was a mayor that Poplar Street was restored.

B. F. Merritt, Jr.

Photographs: courtesy of City of West Palm Beach, Florida

CATALINE REFLECTIVE STRIPING

...the choice of another progressive city

This is Florida . . . the beautiful City of West Palm Beach. You're on South Flagler Drive . . . approaching Lake View Avenue and Royal Park Bridge.

Thanks to long-life pavement markings of Cataline Reflective Striping, traffic moves through this tricky intersection just as smoothly at night as by day. As you travel throughout the city, you'll find more and more Cataline "on duty" around the clock . . . offering full time protection for motorists and pedestrians alike.

Cataline is a special formulation based on Parlon® chlorinated rubber and millions of Cataphote Waterproof Reflective Traffic Beads. Available in white and yellow (pre-mix or drop-on), Cataline will not track after 6 minutes . . . is completely dry in 20. The result . . . neat, clean, brilliantly reflectorized markings that will far outlast any plain stripe you've ever laid.

Progressive communities such as West Palm Beach recognize the advantages of Cataline and profit by its use. How about you? Ask for a copy of Catalog P-160, today.

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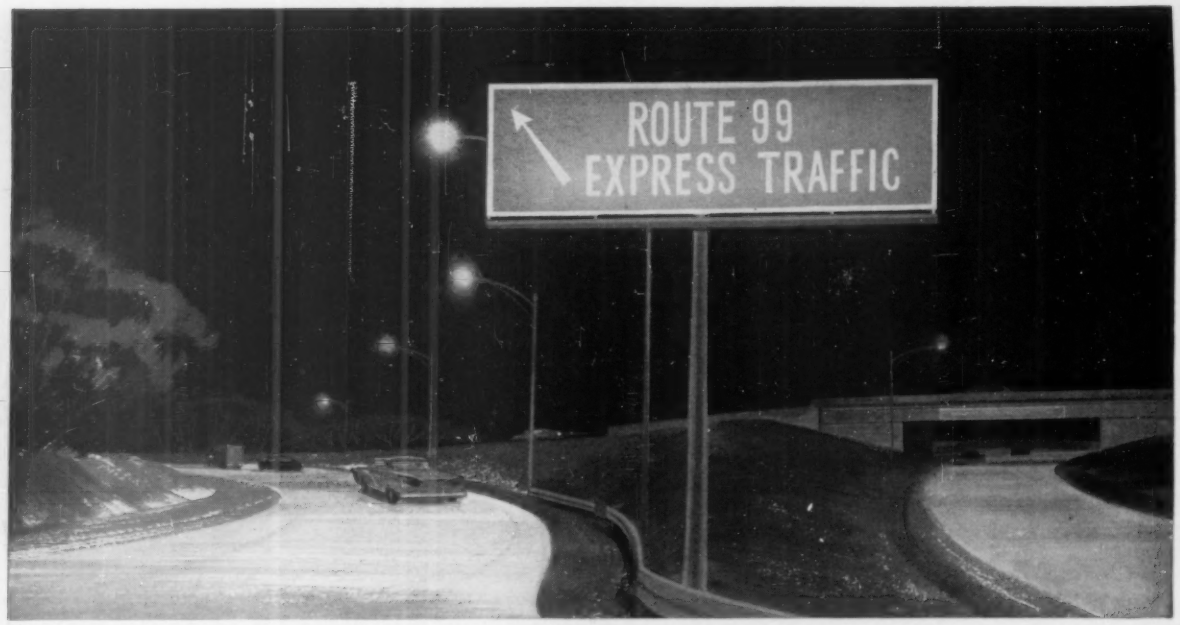
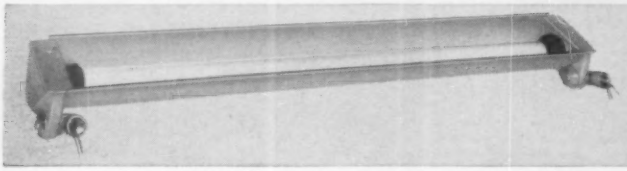
P-160

MANUFACTURERS OF REFLECTIVE TRAFFIC PRODUCTS





The Fluoresign is an outdoor fluorescent luminaire that provides high-visibility illumination for signs, panels, walls, posters and highway markers. It is modular to fit any size sign. It is simple to install and maintain. Models available for all fluorescent lamp types.

Revere Fluoresign gives high-level controlled light for highway signs

High-speed driving on modern highways makes efficient lighting of highway signs a must for safety and driving convenience. Revere's Fluoresign provides the high level of glare-free light needed. The Fluoresign distributes light evenly over the entire sign area, eliminating hot spots and glare. It attracts attention to the sign and allows fast, accurate reading.

Specify Revere Fluoresigns for every location where safe, smooth traffic flow depends on instant attention to traffic control signs. Fluoresigns provide the essential high visibility for fast, easy reading of signs in these key locations.

Assembles to any length The Fluoresign can be fitted to any size highway sign by joining combinations of standard 4, 6, or 8-foot reflectors with standard socket assemblies. The reflectors join to form a continuous, unbroken line that blends attractively with the sign.

Easier adjustment Fluoresign reflector and lamp assemblies rotate as a unit in relation to the mounting arm. This permits accurate placement of light even while lamps are burning. Degree marks on socket assemblies allow easy adjustment of the unit to the desired angle for best lighting.

Easier maintenance A new Butyrate one-piece snap-on cover and the all-compressible sockets make relamping and maintenance easy. The cover shields the lamp from cold weather, helps maintain light output when temperature drops. It won't break, shatter or discolor. Its snug fit lets you mount the Fluoresign with the light directed upward.

Write for Fluoresign Bulletin 300-21 for full information

Revere ELECTRIC MFG. CO.

OUTDOOR LIGHTING

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Long Distance Phone: NIles 7-6060 • Chicago Phone: SPring 4-1200 • Telegrams: WUX Niles
In Canada: Curtis Lighting, Ltd., Leaside, Toronto, Ontario

(Continued from page 150)

to 30-second intervals in normal hours, and to 50-second intervals in peak periods, and "Walk" and "Don't Walk" signals further protect pedestrians. Mercury vapor lamps make the street at night "as bright as day."

Elsewhere, throughout Macon, streets have been paved, curbs and gutters and markings and signs installed. A city sign shop, under Sergeant James Howard of the Macon Police Department, was developed as a part of the general improvement program. It uses a Wald Monoprinter to produce all signs for the city. During the first two years of operation, the shop produced 5,000 signs, and since has averaged 500 signs yearly, to take care of replacements.

Encouraged by the excellent wear of Prismo Plastix markers on Poplar Street, Sergeant Howard has extended their use to major intersections where traffic is heavy, and where painted lines have a brief life. He has also used these markers extensively at school crosswalks, finding that even with traffic counts averaging 37,500 vehicles in a 24-hour period, the material holds up for up to three years. Using the adhesive backing cuts application and lengthens wear. Two Wald Reflecto-liners do the striping throughout the city.

Small-City Planning Conference

The Community Planning Association of Canada is holding its 1960 National Planning Conference from October 23rd to 26th at the Sheraton Connaught Hotel in Hamilton, Ontario. The theme of this conference is "Planning for the Smaller Communities."

One of the most urgent topics to be debated will be "The Aims of a Citizens' Planning Organization." This question will be discussed during the conference sessions and will also be placed on the agenda of the annual general meeting.

Conference registration forms will be sent out with the preliminary program. However, it will be a great help if registrants can notify the association immediately whether they intend to come.

The Community Planning Association Office is at 425 Gloucester St., Ottawa, Ontario, Canada.

NEW .. Siebert

ARISTOCRAT AMBULANCE

BIG—quality car for the money

Features unusual interior roominess and outstanding exterior styling. Balanced body weight provides excellent maneuverability. Custom-built on Ford Station Wagon.

Extra large, lightweight door provides rear opening 40½ ins. clear height by 43½ ins. clear width. New heavy-duty, "swing-out" hinge—interior floor mounted—equipped with oilless bronze bearings.

Extra large rear compartment can accommodate three patients and attendant. Head height 45½ ins. Note spacious door opening and loading area permits easy, quick handling of cots.

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CHICAGO 12

New (MB) Pacemaker 88 Line Marker mounts on Jeep or any light duty truck!

- Fast highway speed between jobs
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Here's a big striper with the versatility to mark centerlines, or centerlines and edge stripes simultaneously. Fast and maneuverable, the low-cost M-B Pacemaker 88 includes an adjustable guide pole and caster wheel, air lift of outrigger guns, positive reflective bead control, plus many more exclusive features. Note full-vision, high, safe position of operator.

Send for information on the complete line of M-B markers, including custom designed heavy duty models specifically designed for your use that are comparable in price to "assembly line" machines. M-B Corp., New Holstein, Wis.

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PRISMO WINS !

It's amazing what a difference Prismo's superior reflective qualities make when put to the test. They have chalked up stunning triumphs against competitors in every part of the country . . . Tennessee, Oklahoma, Delaware, District of Columbia, just to name a few.

Prismo reflective marking materials have consistently outperformed and outlasted all others in the most rigid, comprehensive road tests. Transverse Prismo lines were subjected to gruelling abuse . . . intense wheel abrasions and severe weather-wear failed to diminish their rain-or-shine efficiency and 24-hour visibility. These tests, supervised by traffic engineers and completely unbiased, are unchallenged testimony that NOTHING EQUALS PRISMO *BUT* PRISMO, the acknowledged world-leader in the field of reflective traffic marking.

PRISMO
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Huntingdon, Pennsylvania

The City Tells Its Story

Edited by PAN DODD EIMON

Municipal Public Relations

New publications for and about MPR

Handbook Sums Up City Public Relations; Booklets Push Industry, Tourism

Taking the gobbledygook out of public relations—by providing facts, methods, tested procedures, cost information, and "how-to-do-it" details—is the aim of a brand new (June 1960) "Handbook on Public Relations." Of its 856 pages, at least two-thirds have direct application to municipal government.

McGraw-Hill has published the book; Dr. Howard Stephenson of Boston University's public relations department edited it; two dozen practitioners, including me, contributed chapters to it. Text and tables cover planning policies, setting budgets for PR, appraising results, managing the staff, conducting research, selecting and using the media. Actual public relations programs, for many types of organizations, are presented. Much of the information is basic to public relations for the total city government and for units of it—such as the police department, a planning body, or a tax equalization committee.

Of particular interest to city officials is the section on methods. It tells how to secure and prepare newspaper publicity, how to write internal communications, how to arrange for and set up speaking programs, the what, how, and when of audio-visual techniques (posters, slides, recordings, displays, etc.) and the best ways to utilize radio and television time, including how to prepare scripts.

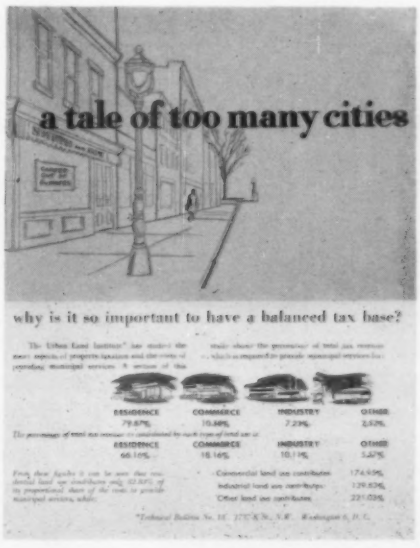
The "Municipal Public Relations" chapter is probably the only round-up of the subject to be published in book form. Included is information on: how to clarify objectives, how to organize the program, press relations, municipal reports, public works referenda, how to handle complaints, how to raise the status of public office, taking government to the people, public relations training for city employees, manning the public relations program, what cities spend for PR, and how to evaluate results. Examples used and "how to" directions given have been drawn from more than 300 municipalities of many sizes, here and in Europe.

The reasons why city officials are interested in municipal public relations are many, the book points out. "A Mayor has heard that a public relations activity 'worked' in another city and wants to try it out. A city manager finds certain reporting procedures recommended as 'best practice' and wishes to follow them. City council members believe the city's business receives inadequate treatment in the press and feel that a public relations office can improve the situation. Another administration is concerned about morale among city employees and hopes to

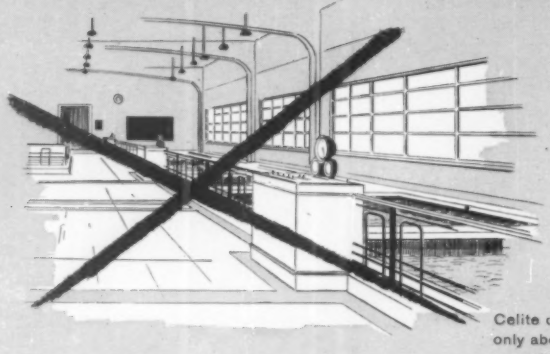
(Continued on page 157)

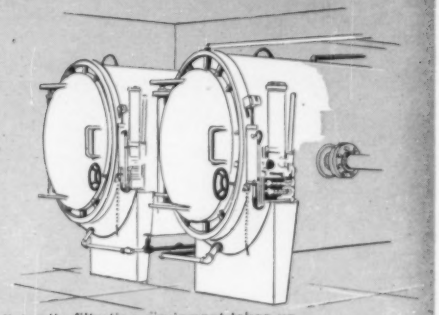
Joplin encourages conventions, tourists, and new industry by means of two-color brochures. *See p. 159.*

Planning, municipal economics, and industry are the topics covered in this booklet. *See p. 157.*



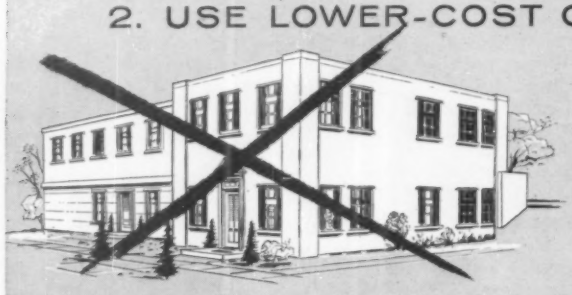
1. REDUCE FILTER HOUSING SPACE 75%





Celite diatomite filtration equipment takes up only about one-quarter the space of equivalent-capacity sand filter systems.

2. USE LOWER-COST CONSTRUCTION



Smaller floor space needed for diatomite filtration permits lighter, lower-cost building methods and materials.

You save filtration construction dollars these 2 ways with Celite diatomite

One installation after another proves you need about 75% less filter housing space for equivalent capacity when you use diatomite filtration with Johns-Manville Celite*.

Also, diatomite's lighter, smaller equipment permits you to use lower cost building methods and materials. For example, a simple concrete slab with light framing and siding instead of a large reinforced concrete-and-brick building with built-in concrete filters#.

Diatomite filter equipment is so compact because it provides a much larger filter surface in proportion to size of equipment. In many cases, raw water can be filtered directly—pretreatment facilities can be eliminated. For Celite removes more suspended solids, including amoebae and algae, and turbidity is usually much lower.

Mined by Johns-Manville from the world's largest and purest commercial diatomite deposit, Celite is carefully processed for purity and uniformity. It is available in a wide range of grades for best practical balance of clarity and flow rate with any suitable filter. For further information, see your nearby Celite engineer. For free technical reprints and illustrated brochure, write to Johns-Manville, Box 14, N.Y. 16, N.Y. In Canada, Port Credit, Ont.

JM PRODUCTS

*Celite is Johns-Manville's registered trade mark for its diatomaceous silica products.

#*See Comparison Studies of Diatomite and Sand Filtration* by G. R. Bell, Journal American Water Works Association, September, 1956 or write for free reprint.

JOHNS-MANVILLE

(Continued from page 155)

remedy the situation. Many city officials want, frankly, to be reelected and hope public relations can insure success."

Six kinds of public relations organizations, as they exist in various cities of the United States, are described in the Handbook. There is the:

1. Public Relations Department — a unit with director, some staff, its own budget, office, and recognized function in the city administrative setup.

2. Public Relations Officer—a one-man operation, often responsible to the mayor or city manager.

3. Administrative Aide — a right-hand man to the city manager with a primary responsibility for public information-education.

4. Combination Officer—someone in the city government given a special portfolio for PR planning and activity, in addition to his regular post which may be that of councilman or department head.

5. Contract Services—a setup under which the city contracts with a public relations counselor or firm for specific services, such as the publication and preparation of a city report, or for fulltime PR-programming for the city.

6. Exploratory operations — where some effort is made by individuals or groups, inside the city hall or by outside citizen groups, to carry on one or several phases of a city-citizen information and education program. Such efforts often lead to the establishment of the PR function within the city administrative organization.

All 28 chapters of the "Handbook on Public Relations" are laced with data and details. The price is a steep $12.50 but the Handbook can serve as text, dictionary, and pattern book for the city official responsible for the municipality's public relations.

* * *

A Tale of Too Many Cities—Main Street, USA, speaks up, in first person, to describe a "planned approach for the recovery of my economic health." Answered by this booklet are: Why is it important to have a balanced tax base? What is the land use plan and what are basic land use needs? What is a zoning ordinance and why does the city need one? What can new industry do for a town? The booklet was written by industrial development analyst George W. Lloyd under direction of Vincent S. Madison. Publishers are Missouri Edison, Missouri Power and Light Co., and the Union Electric Co. Limited copies available, on request to the last named firm, St. Louis, Mo.

* * *

Casper Is on the Move—It's a tabloid-size, newspaper-style report for the City of Casper, Wyoming, published as part of the Casper Tribune Herald and Morning Star. Special attention is given to accomplishments under city manager government and to citizen board members of the Planning Commission, Fort Casper Commission, Electric and Plumbing Boards of Examiners, Board of Adjustment, Board of Public Utilities, and the City-County Board of Health. A traffic circulation proposal of a citizen board, photos of the city in action, and 18 proposals for the year ahead are included. The mayor is Earl Johnson; the city manager, Henry Rolfes, Jr. Copies are available from city hall.

(Continued on page 159)

Tailor-Made Municipal Off-Street Parking

PARCOA® Will Solve Your Parking Problems

Before deciding on *any* parking control system—investigate Parcoa. Wherever parking congestion exists, Parcoa can be relied on to handle your traffic smoothly, safely, efficiently, and economically—all without the need for attendants.

You have full control of parking, day and night. Parcoa engineers can install a parking system fitted to your specific needs with the overall installation based on the many successfully operating Parcoa automatic systems.

PARCOA engineering gives you every possible benefit resulting from years of experience in designing off street parking facilities.

PARCOA affords complete installation and operating simplicity—the answer to controlled parking and/or good income.

PARCOA means low first cost . . . minimum operating cost and an operation that actually pays for itself.

Investigate Parcoa. Write today for bulletin No. 580 or call one of the offices listed below.

Attention distributors: Choice territories available.

FLEXIBLE OPERATION
These control types give you a choice of individual or combination of controls to fit your needs.

CODED CARD-KEY
for cars parking on monthly or reserved basis.

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for controlled transient parking.

TICKET ISSUING SYSTEM
for merchants restricted free parking service.

TIME-DATED TICKET DISPENSER
for automatic self service in merchant participation parking.

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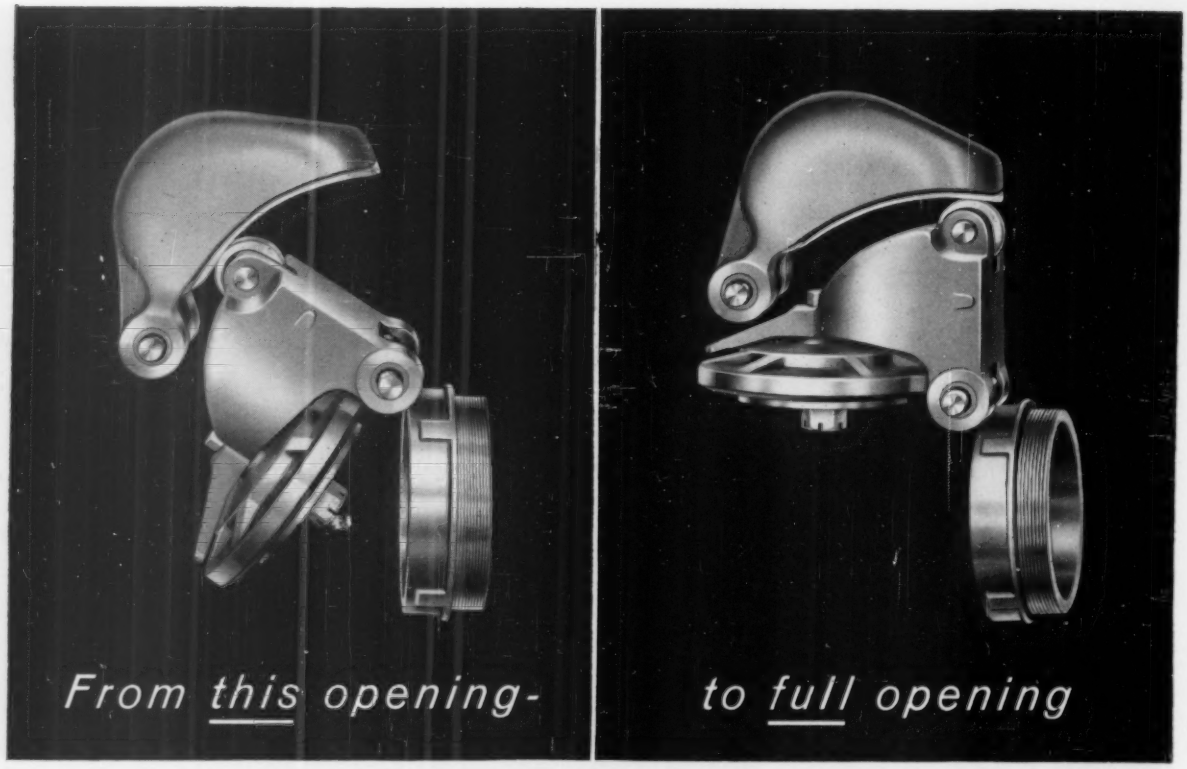
Johnson SINCE 1909 Systems — PRODUCT OF BOWSER RESEARCH

JOHNSON FARE BOX COMPANY • Subsidiary of BOWSER, INC.

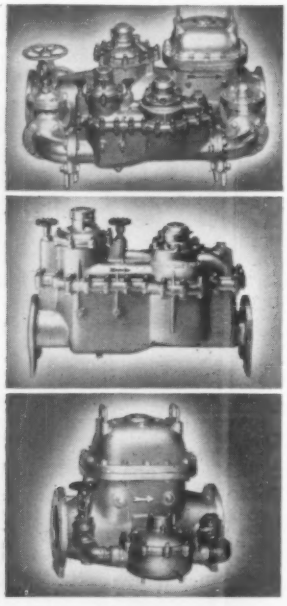
4621 North Ravenswood Ave., Chicago 40, Illinois • Telephone: LOngbeach 1-0217

DISTRICT FIELD OFFICES: NEW YORK: 420 Lexington Ave., New York 17, N. Y. CLEVELAND: 4209 W. 150th St., Cleveland 11, Ohio. SAN FRANCISCO: 468 Ninth Street, San Francisco 3, Calif. ATLANTA: 741 Boulevard N. E., Atlanta 5, Georgia. CANADA: E. A. Horton Sales, Ltd., 299 Bering Ave., Toronto 18, Ont., Canada.

SALES AND SERVICE OFFICES IN OTHER MAJOR CITIES LISTED UNDER BOWSER, INC.



NO ADDITIONAL PRESSURE IS REQUIRED BY THE HERSEY COUNTERBALANCED LEVER VALVE



Here you can depend on instantaneous, unimpeded maximum flow with no further loss of head, due to valve load, after less than 10% of maximum flow has been reached. This results from an immediate shift of the counterweight's center of gravity to a relatively balanced position.

The counterbalanced lever valve is an exclusive Hersey feature. It is an intregal part of all Hersey Detector (Fire Service) and Compound Meters as well as Detector Checks. These are shown on the left.

Before you buy water meters of these types, compare the loss of pressure of Hersey. Their efficiency, accuracy and low maintenance costs can not be equalled. Let us give you more details.

Hersey-Sparling
Meter Company
HERSEY PRODUCTS
DEDHAM, MASSACHUSETTS

(Continued from page 157)

All Roads Lead to Joplin is a two-color folder with pictures, excellent art work, and selling copy that tells why Joplin is attractive to industry. The reasons? Housing is modern and available, there are good shopping facilities, recreation is a matter of "minutes driving time" from Joplin, there are accredited schools, plenty of churches, three hospitals. The present 155 industries located in Joplin have created "adaptable, easily-trained labor." Another hard-sell brochure, also published by the Chamber of Commerce for the city of Joplin, urges "Make Joplin your next Convention City" and lists entertainment-convention facilities. Copies are available from the Chamber of Commerce, Joplin, Mo.

* * *

The Second Annual Report of Clyde, Ohio, packed an uncrowded lot of information into four full-size newspaper pages. Accomplishments, plans for the current year, the story of the last ten years, a city map and organization chart are presented. Clyde's mayor is E. J. Curry; the village manager is Joseph D. Banta. Sample reports may be obtained from city hall.

* * *

The Nation's No. 1. Shrine—Philadelphia — Philadelphia's Office of Information has turned out a colorful 16-page supplement to the Sunday New York Times (May 22, 1960). Its purpose, according to the statement of the Office of Information is to "inform those who may be visiting either on business or pleasure." Covered are historical, recreational, business, and cultural sights of Philadelphia. The cover and four inside pages are in full color. Advertisements, from Philadelphia businesses, are carried in the supplement. The entire section was an "advertisement" paid for by the city. Limited copies are available from the Office of Information, City Hall, Philadelphia. ◄

A Correction

An item on our Public Safety page last month, entitled "A Ready Siren Even in Deep Freeze" (p. 31), incorrectly gave the address of the American Grease Stick Company as Muskegon, Ill. The American Grease Stick Company is located in Muskegon, Michigan. ◄◄

machine: in June 1959 we purchased a Vermeer Pow-R-Stump Cutter.

Stump Removal

. . . wins public good will and adds beauty to Appleton, Wis.

By EDWIN DUSZYNSKI*
Director of Public Works

Appleton, with a population of about 48,000, instituted a stump-removal program strictly as a public relations activity. During the first four months of operation, July through October 1959, we learned two things. First, if handled properly, this business of removing stumps can be accomplished quickly, satisfactorily and economically. Secondly, the results in public good will and better-appearing streets is well worth the small cost involved. Other benefits add to the program's value.

For many years the Public Works Department did offer some assistance to property owners faced with the problem of removing stumps along the parkway or boulevard strip between the street curb and sidewalk. This consisted of lifting out the stump and hauling it away after the property owner had excavated around and under the stump and cut enough of the roots for easy removal. We made no charge for this service.

Over the years many trees in the parkway had been cut down for various reasons. In most cases a chain saw had been used, with the cut made as close to the ground as possible. Only a few people undertook the task of digging out the remaining stump. Others resorted to whittling away at the stump with an axe, burning it from the top down, or drilling holes in the stump and applying chemicals to accelerate disintegration. Seldom did these methods result in a satisfactory job, and in most cases the stump was left intact to mar the appearance of the parkway.

Aldermen Investigate

In view of the interest of abutting property owners in improving the parkway strip, which is part of the street right-of-way, several aldermen felt that the city should take some action. The expenditure of city funds was justified in that the work would be on city property.

Research revealed that others had tried many types of stump removal equipment but a Vermeer stump cutter showed the most promise. On a trial basis we hired two retired city employees of an adjacent city who owned such a machine and were engaged in the stump-removal business. These men went to work on several troublesome stumps while several aldermen watched the operation. At the next budget time, these aldermen provided the impetus to include funds for the purchase of a machine; in June 1959 we purchased a Vermeer Pow-R-Stump Cutter.

[illegible] of cutting a stump ten inches below the level upon which the tires rest. A larger machine is available that will cut 18 inches below grade. With either machine the cut below actual grade can be extended by excavating around the stump to permit the machine's wheels to be placed at a lower elevation.

The unit, mounted on two pneumatic tires, consists primarily of an air-cooled gasoline engine supplying power to operate a cutting wheel and hydraulic pump. The pump provides pressure for hydraulic movement of the cutting wheel either horizontally or vertically.

We use a Willys Jeep to tow

* Mr. Duszynski has served as Director of Public Works for the City of Appleton since 1954 and prior to that held the same position in Cudahy, Wis.

Thanks, Mr. Duszynski!

Mr. Edwin Duszynski, Director of Public Works in Appleton, Wisconsin, tells of his experience with the Vermeer Pow-R-Stump Cutter in the above article from the June issue of American City Magazine. "The most economical method of stump removal I know of," is the way he describes the action of the powerful model 10 Pow-R-Stump Cutter. This is just one of hundreds of outstanding recommendations received each year from cities, parks, golf courses, cemeteries and tree service firms all over the country.

PATENTED VERMEER POW-R-STUMP CUTTER MAKES CHIPS OUT OF STUMPS IN MINUTES

You'll save hundreds of man-hours and thousands of dollars annually when you remove ugly stumps with the Pow-R-Stump Cutter. Removes any size stump in minutes. It is an easy one-man operated unit. Allows close quarter cutting to sidewalks, buildings, curbs and driveways without damage. There's ONLY ONE POW-R-STUMP CUTTER . . . ask for a FREE demonstration. (Registered under U.S. Patent No. 2912022.)

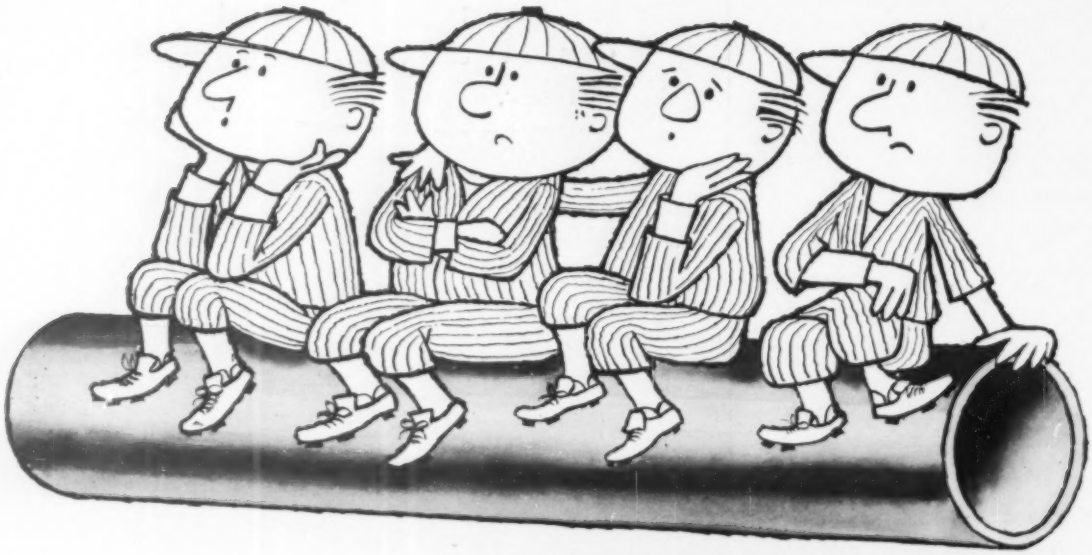
MAIL COUPON FOR COMPLETE ILLUSTRATED LITERATURE AND LOW PRICES NOW

Send complete descriptive literature and prices on your POW-R-STUMP CUTTER to:

NAME ..... PHONE .....
TITLE or DEPT. .....
FIRM .....
ADDRESS .....
CITY ..... STATE .....

VERMEER MANUFACTURING CO.

1452 W. WASHINGTON • PELLA, IOWA



no place for **SUBSTITUTES** *in pipe selection*

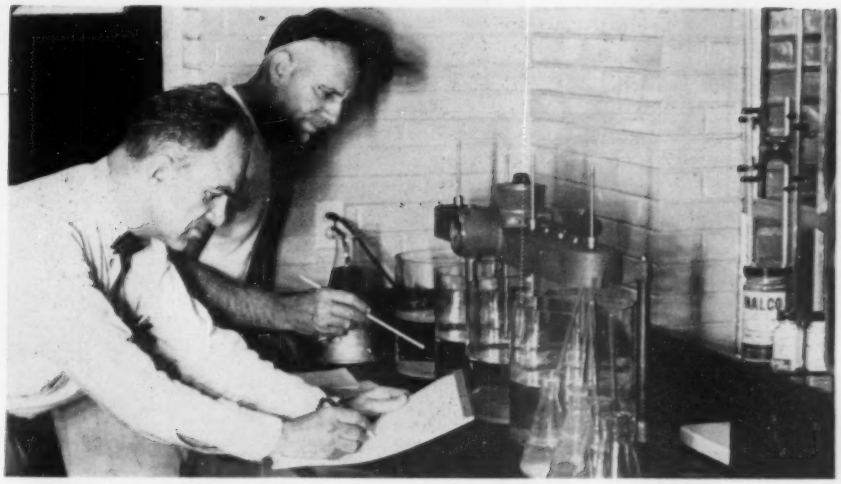
Check the score before experimenting with substitutes for cast iron pipe!

POINTS TO COMPARE	CAST IRON PIPE	SUBSTITUTE PIPE
Long Life	100 Years or more	?
Bursting Pressure	2,988 psi	746 psi
Bursting Tensile	25,880 psi	3,430 psi
Impact Resistance	234 ft. lbs.	60 ft. lbs.
Beam Loads (12-foot span)	20,790 pounds	3,060 pounds
Crushing Loads	17,900 lbs. per ft.	6,480 lbs. per ft.
Water Absorption	None	9.8% of weight after 24-hour submersion
Tight Joints	Wide selection for liquid or gas service	Limited selection for water service
Inside Diameter	6.14"	5.85"

Pipe tested were 6" Class 150.

AMERICAN
CAST IRON PIPE CO.
BIRMINGHAM ALABAMA

SALES OFFICES: Chicago
New York City — Kansas City
Dallas — Minneapolis — Denver
Pittsburgh-Orlando-Cleveland
Birmingham



Fremont continues its search for coagulants that might do a better job. Here author John Hess (left) and laboratory technician James Plihall run a series of jar tests.

Coagulant Choice—Key to Efficiency

. . . in lime-soda softening at Fremont, Ohio

By **JOHN S. HESS**, Engineer-Superintendent
Water and Sewage Treatment, Fremont, Ohio

The search for a proper coagulant in water treating is a never-ending one. Although agents currently being used might do an admirable job in dealing with high natural turbidities and high hardness, the fact remains they are not always the most effective and economical available.

Improvements in the quality of commonly used materials, development of new materials, or changes in the relative prices of any of the softening or coagulating chemicals may dictate the necessity for changing to new combinations.

Even a change in the hydraulics of a plant when switching from one rate of flow to another can influence the choice of coagulants because the rate of floc formation or the rate of settling may be critical under some conditions, although of negligible consequence under others.

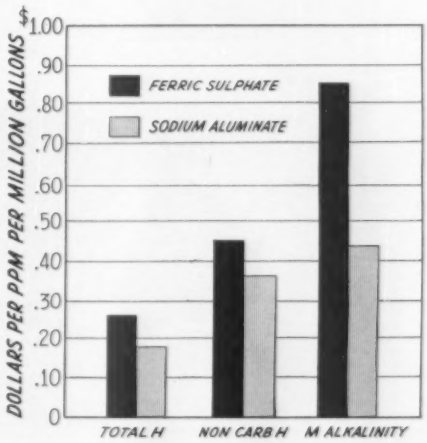
The results of a four-year study made at the Fremont water purification plant show that water of high purity and softness can be produced more efficiently and more economically than we had previously thought possible by following a well-defined course of action in selecting coagulants.

Most studies in the field of coagulation deal with comparisons between metallic salts and their ability to remove turbidity from a given water-solid system. Unfortunately, these studies often are conducted on synthetic waters containing only pure clay suspensions and, though of limited value, may be the only ones available as a guide to the selection of a coagulant for a given system. But when lime-soda softening is practiced—as it is in Fremont

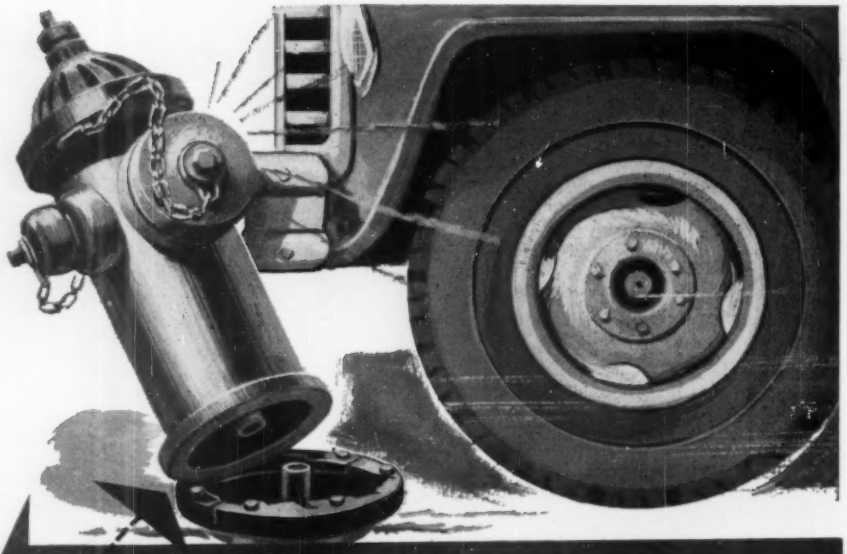
(Continued on page 163)

RESULTS OF COMPOSITE ANALYSIS

Raw Al_2O_3 ppm	Effluent Al_2O_3 ppm	Raw Turbidity ppm at SiO_2	Effluent Turbidity ppm as SiO_2	Sodium Aluminate Dosage ppm
0.5	Trace	50	0.3	8
1.1	0.1	80	0.2	10
0.9	Trace	102	0.2	12
1.5	0.1	150	0.6	15



Twenty-three months' cost analysis, using sodium aluminate and ferric sulphate.



THIS DEMONSTRATION

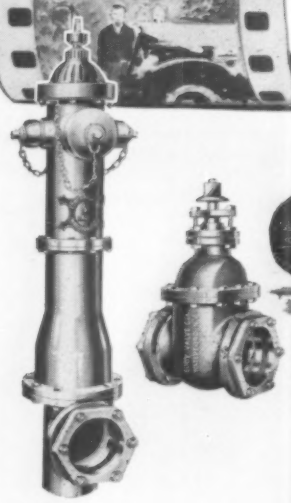
...proved the advantages of

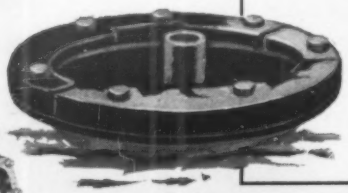
THE NEW EDDY BREAK-FLANGE HYDRANT

• Clean breaking action of the new EDDY break-flange hydrant is clearly demonstrated in this film strip of a test made recently for Mr. Herbert Campbell, Town Engineer, Wayne, New Jersey. Just as it was designed to do, the hydrant broke off at the break-flange and the coupling sheared at the weak point.

Mr. Campbell was so impressed that he changed the specifications on the spot...wrote new specifications around the EDDY Hydrant. Another EDDY feature which appeals to economy-minded waterworks officials is that these hydrants, with the break-flange feature, are the same as standard EDDY models in all other respects. Working parts are interchangeable and no separate inventory of repair parts is required.

We'll be glad to help you arrange a similar demonstration.
It pays to standardize on EDDY hydrants and valves.





NO HARM TO HYDRANT...

As shown, the safety stem coupling shears off at the ground line. The break-flange gives way without damage to stand pipe or nozzle sections. With break-flange construction the hydrant is easily and economically replaced without digging or costly repairs.

EDDY VALVE COMPANY
A Subsidiary of James B. Clow & Sons, Inc.

WATERFORD NEW YORK

(Continued from page 161)

—together with clarification, a comprehensive study must be made of the entire process. This is best accomplished through an extended trial in operating clarification softening equipment.

Conversion of dissolved calcium and magnesium ions into insoluble precipitates results in myriads of fine, highly dispersed particles. This synthesized turbidity stubbornly refuses to settle. Therefore, if these particles are to be clumped into aggregates which possess a reasonable settling rate, the proper coagulant must be selected. This choice must be made with a knowledge of several factors when appraising a material as a coagulant for a lime-soda softening process. Among them:

1. The optimum pH at which these insoluble precipitates best form and the possibility of retarding or accelerating the softening reaction by adding a given coagulant.

2. The charge on the dispersed precipitates and the ionic charge of the coagulant, and whether the precipitate will be attracted or further dispersed by a given coagulant.

3. Whether the addition of the coagulant will set up side reactions augmenting the softening process or react to produce one of the salts associated with water hardness.

The Sandusky River, from which Fremont obtains water, drains approximately 1,200 square miles of land that is mostly flat and cultivated, and partially underlaid by dolomite limestone and gypsum.

During periods of intense rainfall, water turbidities rise to 3,000 parts per million, accompanied by lower alkalinities and hardness. In dry periods, hardness rises to 700 ppm and turbidity is scarcely detectable. This happens when water moves slowly over and through the rocky river bed after dissolving sufficient carbon dioxide to make it a good limestone solvent.

The Fremont Water Purification plant opened in 1928 as a 3-mgd unit, using aluminum sulfate as a coagulant and lime and soda ash for softening. Activated carbon—at times—was employed for taste and odor control, and post-chlorination for disinfection.

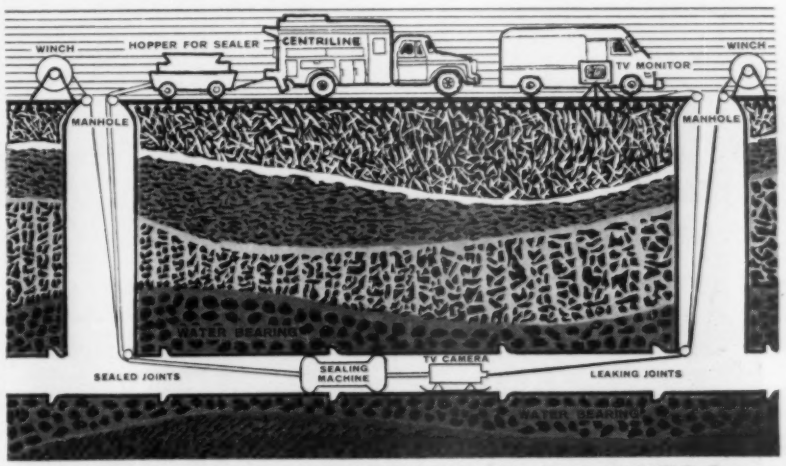
When, in 1933, sticky, scum-forming material began passing through the sand filters, especially in winter months, laboratory tests were conducted to determine whether iron salts (ferrous sulfate, liquid and solid ferric chloride and ferric sulfate) would be suitable coagulants. Although these tests were encouraging, the cost per pound of the materials was prohibitive.

However, in 1941, plant operators reconsidered iron salts when water usage increased, resulting in shorter detention periods and greater loads on the filters. Further laboratory tests proved satisfactory and indicated the need for further study on a plant scale. In February 1942, equipment for using ferric sulfate coagulant was installed. Throughout the rest of that year and during 1943 the plant operated alternately on alum and ferric sulfate as a test of the relative merits of the two coagulants under widely varying conditions of temperature, turbidity and hardness.

The ferric sulfate produced better clarified water under virtually every condition, at savings in cost of the coagulant ranging from 16% to 61%. Also, this iron salt required approximately 33% less by weight to achieve optimum coagulation.

Tests showed that no residual

(Continued on page 165)



NEW! THE CENTRISEAL PROCESS ELIMINATES LEAKING JOINTS

Now joint leakage can effectively be stopped in small as well as large sanitary and storm drains. By remote control—constantly monitored by television which finds the leaks and checks the seal afterwards—special CENTRISEAL PROCESS equipment forces a fast-setting polymeric sealer into open joints **from the inside.** This forms a tough seal in the pipe joint as well as outside in the surrounding soil. You're thus assured a permanent bond, and leakage from either internal or external pressures is prevented. No excavations are necessary and the grouting process is remotely controlled from above ground. Savings are found in maintenance and pumping costs and capital expenditures are avoided.

INCIDENTALLY... If your problem is more than leaking joints, if you have deteriorated pipes, investigate the other Centriline services. The CENTRILINE PROCESS lines pipes with a cement mortar or acid-resistant epoxy mortar applied centrifugally. Because the pipes remain in place, there's no traffic interruption. Pipe life is increased, ground and pavement settlement due to infiltration eliminated. Write now for complete information on the CENTRISEAL PROCESS for leaking joints and the CENTRILINE PROCESS for lining pipe.

CENTRILINE CORPORATION

Subsidiary of Raymond International Inc.

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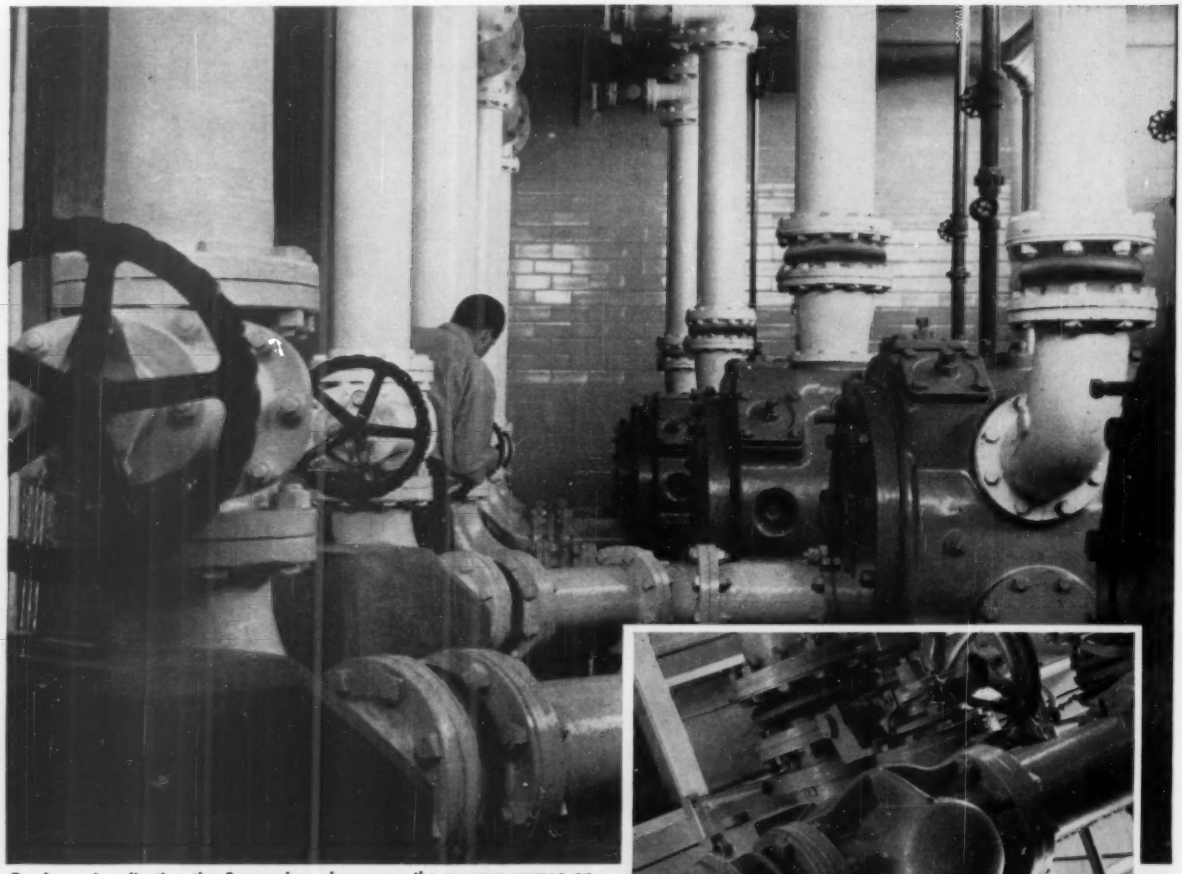
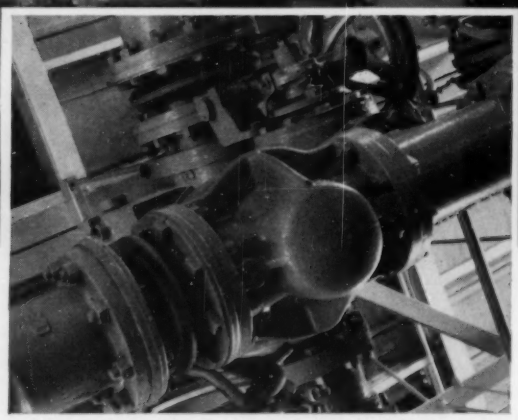
Branch Offices in Principal Cities of the United States, Canada and Latin America

EXPANSION JOINTS



Employee is adjusting the flow valve; shown are the vacuum pumps on which 6" and 10" expansion joints are installed.



Close-up of the 6" joint in the sludge heat building, with the 10" joint in the immediate background.

655 is a lot of joints

..."U.S." EXPANSION JOINTS THAT IS!

655 Expansion Joints are installed in the new Mill Creek Sewage Works of Cincinnati, Ohio.

Mill Creek, largest of the three completed sewage plants in the city, is one of five plants that will treat 120 million gallons of sewage per day.

A "U.S." Expansion Joint is placed between the sewage pump and a long run of cast iron pipe—a total of 1639 tons—to stop vibration and to take the weight off the pump itself. The "U.S." Joint assures expansion or contraction of the long pipe. U.S. Rubber Expansion Joints are used exclusively—to the total of 655. Any breakdown of pump or pipeline would bring plant operation to a halt. "U.S." Expansion Joints have proved their reliability since they were invented by U. S. Rubber. Hundreds of these joints – on the job *30 years and more* in many industries—continue to prove their durability and reliability.

• • •

When you think of rubber, think of your "U.S." Distributor. He is your best on-the-spot source of technical aid, quick delivery and quality industrial rubber products.

Mechanical Goods Division

United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y. In Canada: Dominion Rubber Company, Ltd.

(Continued from page 163)

iron carried over to the finished water. Filter runs improved considerably, extending backwash requirements to once each 300 hours on the average, compared to 36 hours maximum with alum. A smaller amount of activated carbon was required to maintain taste and odor standards. Coagulant activity increased with greater turbidity.

Although these tests proved highly satisfactory, the over-all cost of softening was not evaluated. The results were judged entirely on the relative coagulant dosages required to handle a given amount of turbidity in the raw water.

Fremont doubled its plant capacity in 1952 and 1953, duplicating all existing units and adding a rapid-mix chamber ahead of the flocculators. Shortly thereafter we started running jar tests to evaluate the suitability of sodium aluminate as a coagulant for the lime-soda softening process, making note of over-all costs and the condition of the finished water. Results were sufficiently good to justify further investigation on a plant scale.

We purchased a shipment of sodium aluminate from the Nalco Chemical Company, a chemical manufacturer and consultant in the water treatment field, and used this material as coagulant alternately with ferric sulfate in runs that lasted approximately a month at a time. The manner of plant comparison was identical to that used previously with alum and ferric sulfate, except that the over-all cost of softening was compared rather than only the cost of coagulation.

Cost Analysis

A cost analysis showed a 30% savings in 23 months. Eleven of these months were reasonably "pure" in the use of sodium aluminate and 12 in ferric sulfate. In computing the savings, we used a factor that included cost of coagulant, lime and soda ash per ppm of total hardness removed, based on per million gallons of water treated. (See the graph on p. 161.)

All figures were adjusted to f.o.b. prices at the plant's dock in Fremont. We made no comparison on differences in the requirements for recarbonation, fuel, chlorine, polyphosphate, corrosion potential to coagulation equipment, or handling and labor costs, since these factors are influenced more by plant operating procedures than by choice of coagulant.

Quantitative analysis tests run on influent and effluent water determined the amount of alumina that carried over into finished water. A composite of 91 complete analyses made under varying water conditions showed that alumina in effluent was lower than that found in raw water, and no higher than when using ferric sulfate as a coagulant. In addition, filter runs with sodium aluminate were equivalent to those obtained with ferric sulfate. The table (p. 161) shows results of the composite analysis.

Experience with various coagulants at the Fremont plant shows that sodium aluminate alone is particularly suitable when greater hardness reduction is required. On the other hand, ferric sulfate is superior to either alum or sodium aluminate when unusually high turbidities are encountered. Such conditions, however, exist less than 10% of the time.

Although the Fremont Water Purification plant is operating efficiently and economically with sodium aluminate and ferric sulfate,

(Continued on page 166)

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CALMET METER DIVISION

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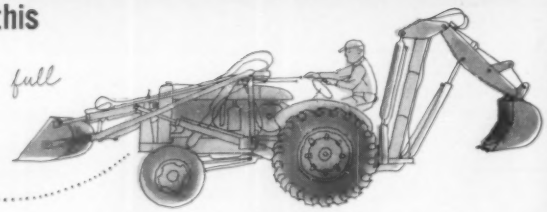

plus... husky tractor with back-hoe and front end loader

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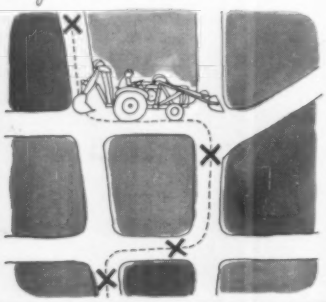
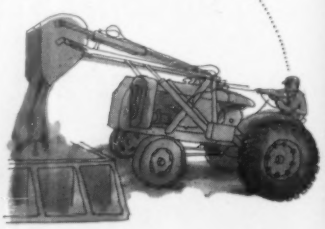


same man can dig, scrape, haul, grade, fill... etc... etc...



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Backhoe	$ 3,900
Schramm 125 cfm Compressor	$ 3,720
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if bought separately at average prices

Schramm Heavy Pneumatractor ... $12,421.50

Write for Catalog 5740. And see your nearest Schramm Dealer listed in the Yellow Pages.

Schramm PNEUMATRACTORS

603 North Garfield Ave., West Chester, Pa.

(Continued from page 165)

we search continually for coagulants that might do the job better. Laboratory tests are being run on new agents, including polyelectrolytes, but so far none has been found which offers a decided improvement over current choices for our particular plant and water source.

Sodium aluminate has proved the best material for high hardness. Ferric sulfate is superior for high natural turbidities. Transition from one coagulant to the other is performed readily. However, we note with interest that when these agents are used in combination, the results are poorer with any water tested than when either compound is used independently.

The writer is indebted to the following for ideas and studies that led to compilation of data included in this article: The late William H. Schneider, my predecessor as superintendent, for experimental work with ferric sulfate; Robert W. Kirkconnell, staff engineer, Nalco Chemical Company; J. L. Plihall, laboratory technician at the Fremont Water Purification plant; and all the operators at the plant, without whose cooperation plant-scale experiments would have been extremely difficult. ◄◄

New Site Proposed For Modern Athens

A plan to save the ancient city of Athens, cradle of architecture, from strangulation due to over-expansion and to give it room to breathe has been advanced by the Greek architect and city planner, Dr. Constantine Doxiadis. His proposal, now being considered by municipal authorities, is to move the heart of the capital 15 miles north on the plain of Attica.

Dr. Doxiadis, who is engaged as a consultant in city planning for six capitals throughout the world, admits that his solution to the congestion choking the city is a bold one. However, it is no bolder than that executed by the Roman Emperor Hadrian nearly 2,000 years ago and by German architects in the 19th century when faced by the necessity of laying out a new capital.

Modern Athens, like most cities, has reached a critical stage. Her population of nearly 2,000,000 is increasing at the rate of 3.4% per annum and will reach a figure of 7,000,000 by the year 2000 at the present rate. About 6,500 additional motor vehicles enter her streets each year, and three additional

structures are erected in the city with each passing hour.

Dr. Doxiadis has formulated his plan on the principle that a city should not be permitted to grow in a concentric pattern because it tends to suffocate the center and block its expansion, but should be encouraged to grow in a single direction where ample land area is available for continuous development.

Dismissing suggestions that the capital should be transferred to another city in Greece as being ruinously expensive, the architect proposes to create a new heart for the city by constructing two new trunk highways—one a north-south artery linking the Saronic Gulf with the City of Salonika and the other a west-east artery connecting the Peloponnesus with Cape Sounion—and locating the capital at the junction of these roads.

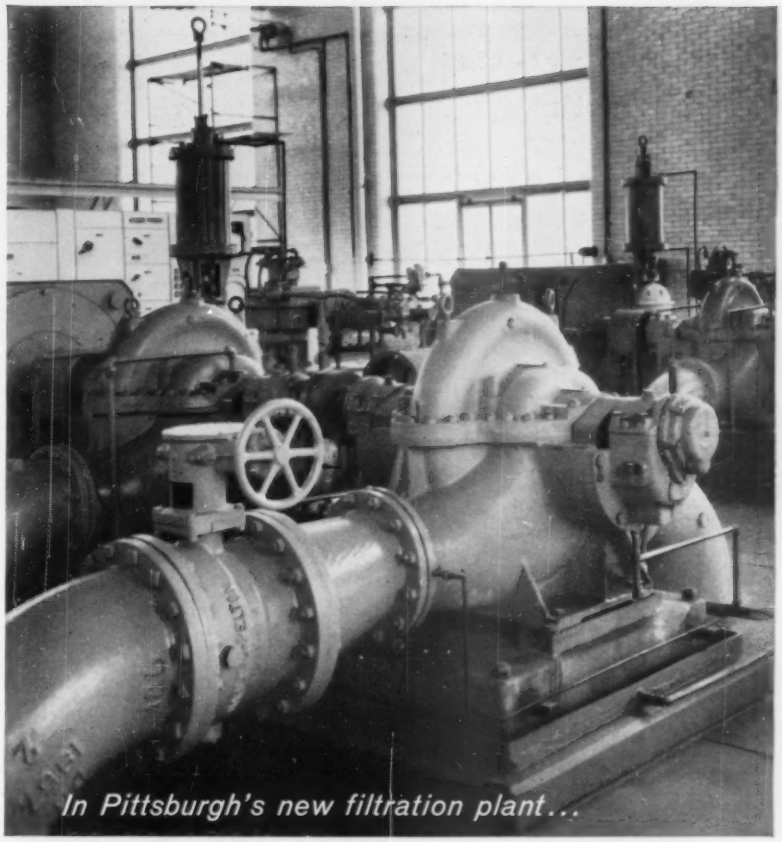
To this spot, under the shadow of Mt. Pendeli and Mt. Parnes and within sight of the battlefield of Marathon, Dr. Doxiadis would move the entire machinery of government, the headquarters of the armed forces, and the University of Athens, the occupants of Embassy Row and scientific, social and economic institutions of a semi-official nature.

At the same time, he plans to build a large new port in the nearby Bay of Eleusis to meet the shipping needs of the future and lessen the strain on the heavily-burdened Port of Piraeus, which might be reserved exclusively for passenger traffic in the future.

To achieve the maximum in decentralization, his proposal calls for the division of the plain of Attica into 15 municipal districts, each independent of the other and each with its own basic governmental, educational, health and commercial services. Under his plan, life would flow smoothly along the new highways to and from all parts of Greece and it would be possible to reach the center of the capital without crossing the densely populated sections of Athens, Piraeus and their suburbs. ◄◄

15,000 Signs

The Phoenix, Ariz., Division of Traffic Engineering reports that, in February, 166 traffic regulatory signs and 161 stop signs were installed bringing the number of traffic signs to 15,601, an increase of 3,205 signs in one year.



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To insure "heart of the plant" efficiency in *your* municipal installation, specify Darling Valves. Tell us about your requirements.

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DO VOTERS LIKE AUTOMATIC VOTING MACHINES?

In an Oklahoma municipal election last April, polling place officials interviewed every voter. Here are the results as published in the local paper

While voting:

No difficulty	99.93%
Some difficulty	0.07%

After voting:

For machines	98.58%
Against machines	1.42%

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CHAMPION CORPORATION

The Hiller helicopter keeps an eye on things for the Los Angeles Police.

L.A.'s Police Helicopter Detects Fires and Traffic Jams

By **H. W. SULLIVAN**
Deputy Chief Commander
Traffic Bureau
City of Los Angeles

For four years the Traffic Enforcement Division of the Los Angeles Police Department has operated a helicopter primarily for police traffic supervision of the freeways (see THE AMERICAN CITY, April 1960, page 121). In order to maintain constant patrol of the freeway system, 40 of the division's 340 motorcycle officers, under the supervision of three sergeants and one lieutenant, operate as a Section (Special Problems Section) of the Division.

Four men, all regular members of the Department with the rank of policeman, are assigned to the helicopter unit. Three of the men are qualified helicopter pilots. The four men assigned to the helicopter operation receive a hazard bonus of $91 a month.

The helicopter observes and reports trouble locations and incidents to our Communication Division. Radio-equipped, two-wheeled Harley-Davidson motorcycles are immediately dispatched to such locations to remove the hazard.

The value of the helicopter patrol has been extended by a system termed Sigalert. Radio stations in the Los Angeles area maintain receivers tuned to the police broadcast frequency. By pressing a button at the police communications division a carrier wave is sent out that activates the receivers and, normally, an attached tape recorder. Traffic bulletins reporting congestion or tie-ups are initiated from the helicopter and by Sigalert relayed to the commercial broadcast station. These stations immediately broadcast the information to their listeners.

The helicopter is also employed at events held in the Los Angeles Memorial Coliseum or Hollywood Bowl; traffic surveys; photography in connection with traffic surveys, training, or public information films; surveillance or searches and coordination of police control at scenes of major traffic dislocations due to fire. Reconnaissance service is rendered the Fire Department and this is invaluable in mountain fires.

The initial operation cost of 1080 hours of flight time was as follows:

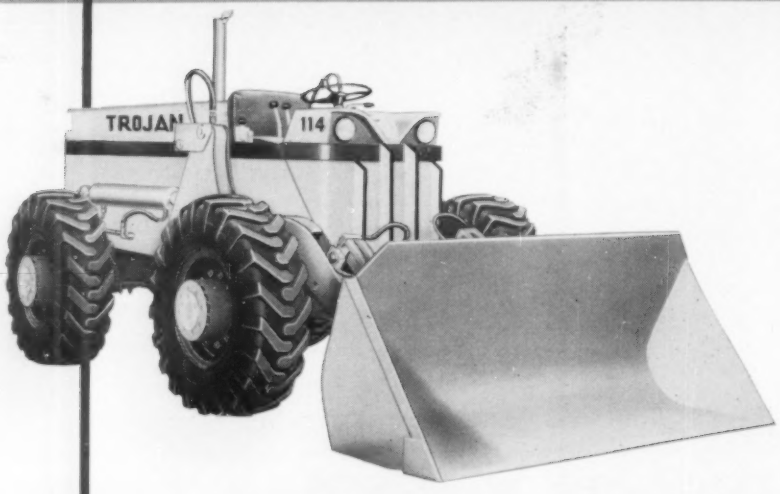
Maintenance	**$13,156.00**
Major overhaul—	
1st—$3,648.00	
2nd— 3,950.00	**7,598.00**
Gasoline	**5,849.00**
Lubricants	**436.00**
Insurance	**794.00**
Miscellaneous	**63.00**
	$27,896.00
Cost per hour (1080)	**25.83**
Salary cost, 4 men @$607 for 17 months	**$41,276.00**
Cost per flight hour	**38.22**

Accomplishments

During the 986 hours of freeway patrol the helicopter unit reported 430 stalled vehicles and 161 traffic accidents. As an additional aid, 52 Sigalert broadcasts were initiated at the request of the unit. Thirty-seven fires were reported including one brush fire; and residents were alerted by flying low, preventing a major property loss. ◄◄

SAVE

WITHOUT SACRIFICE



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'114' ECONOMY FOR YOUR TAXPAYERS . . .

Now—you can get the performance of a heavy-duty Trojan tractor shovel for little more than the cost of a good wheel tractor . . . There's the job flexibility offered by a complete line of attachments *plus* low operating and maintenance costs . . . all at a budget price that will satisfy critical taxpayers. *Saves taxpayers' money without sacrificing work production!*

'114' PERFORMANCE FOR YOUR ROAD CREWS . . .

The safe and easy operation with finger-tip controls, full power shift transmission and planetary axles will help your operators to handle far more work per day—make swift moves at 25 m.p.h. speeds . . . Quick-change attachments give them a 'one machine fleet' for maximum daily operating efficiency. *Saves operator's time without sacrificing work production!*

TROJAN TRACTOR SHOVELS ARE AVAILABLE IN 7 MODELS—LIFTING CAPACITIES FROM 6,500 to 24,000 LBS.

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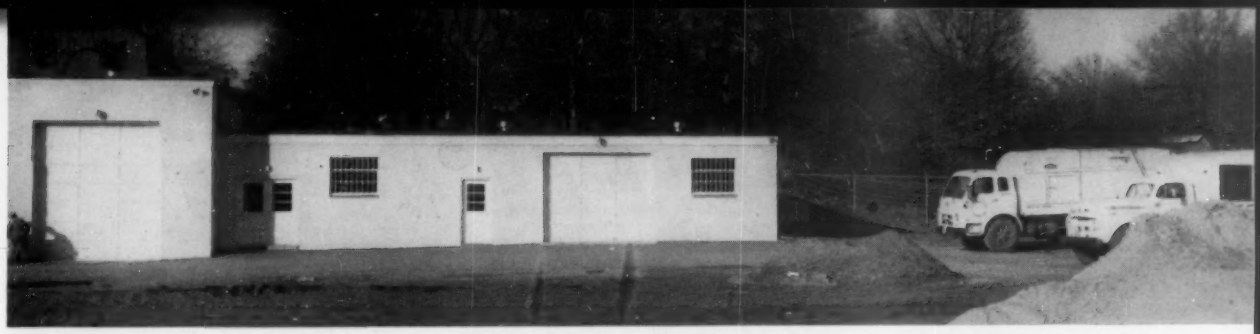
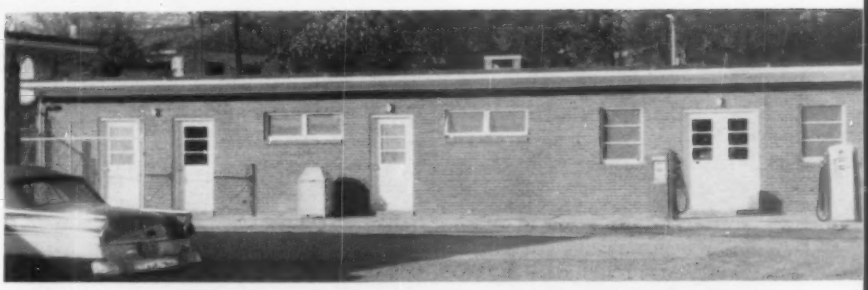


Three equipment repair bays (one is shown at left), a carpenter shop plus ample storage space provide the best in working conditions and facilities.

Takoma Park, Md., moves into a well planned public works center and finds that . . .



Personnel have not been forgotten; this part of the maintenance building houses separate shower and locker facilities for highway and sanitation divisions.

Better Facilities Mean Better Work

By **HAYNES M. PRIDGEN**
Clerk and Treasurer

When the City of Takoma Park occupied its new public works buildings last fall, it did more than make a simple physical move. The changeover from antiquated and inadequate housing facilities to new quarters designed to expedite the accomplishment of specific tasks did much toward making our employees contented and happy. There is probably no better morale booster than a hot cleansing shower after a day of slinging trash burlaps over shoulders or pouring hot asphalt on city streets.

This has been borne out by Public Works Director Earl K. Rhodes' statement that personnel problems have been greatly reduced since occupying the new quarters in September 1959.

To appreciate the new, a brief description of the old will be helpful. For many years the public works department struggled along with offices that were too small, poorly heated in winter and hot in summer. Also there was space for only one vehicle in an unheated repair shop and the restrooms and shower facilities for the sanitation division and highway division employees were far from adequate.

The new facilities consist of three separate buildings; the administration building, approximately 36 feet by 58 feet in size; the maintenance building, 187 feet long and varying in depth from 25 feet for the personnel facilities portion to 40 feet for the repair shop portion; and a parks office, 18 feet by 25 feet in size, plus an attached greenhouse.

The administration building, containing some 1,900 square feet, includes a business office; storage vault; office for the director of public works; conference room; office for the sanitation, streets and building supervisors; plus the necessary storage space and the restroom facilities.

The parks building includes an office plus storage for various park supplies. Parks Supervisor Vincent Powell considers the attached greenhouse as the prize package of the entire program, for now he can raise his own flowers during the winter for transplanting in the various parks in spring. Equipment includes a thermostatically controlled

(Continued on page 173)

All public works business in Takoma Park is now conducted in this modern, well equipped administration building.

ONLY ROTO-PAC HAULS AN EXTRA LOAD EVERY DAY WITHOUT EXTRA EQUIPMENT OR EXTRA PAY!

That's what the time saved on any route by ROTO-PAC adds up to, thanks to continuous loading plus continuous compaction.

SEE IT IN ACTION WITHOUT LEAVING YOUR OFFICE . . .

Color movies of the world's finest and fastest rubbish collection unit show the versatility of ROTO-PAC on both typical and unusual routes. Prefer a "live" demonstration? A letter or phone call arranges it. No obligation, of course.

P.S. At the same time you'll see the ultimate in container systems — built to handle both manual and automatic loading of containers ranging from ½ to 6 yards from dock or street level.

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(Continued from page 171)

heating and ventilating system for the modern aluminum and glass greenhouse.

We consider our new maintenance building as the real morale booster. The personnel portion, 64 feet by 25 feet in size, includes a double set of lunch or rest room, locker, toilet and shower facilities so that the street division and sanitation division each has its own area. In addition this portion of the building includes the auto equipment supervisor's office with private lavatory, a boiler room and the automotive parts storage room.

The repair shop presents the greatest contrast between the old and the new. The three bays totaling 2,300 square feet contain facilities to repair equipment from the smallest lawnmower to the largest packer refuse-collection truck. The repair shop floor is heated by hot water heating pipes imbedded in the concrete. Large ventilating fans plus an 18-foot-high ceiling provide as near air-conditioning comfort as possible.

Carpenter Shop

A carpenter shop located adjacent to the repair shop provides ample space for bench saws, work horses and other equipment as well as racks for lumber and shelves for paint and other supplies.

Finally there is the general storage area, about 39 feet square, for storage of street signs, ladders, chain saws, sewer cleaners, and other equipment and supplies used by the streets division.

The equipment repair supervisor and his assistant put the shop to good use in maintaining four refuse trucks, four dump trucks, two pick-up trucks, a station wagon, four police cars, four police motorcycles, one street sweeper, a leaf collector, one street roller and many portable tools.

The new facilities are used by the director of public works and his full-time secretary, the supervisor of sanitation and his 14 men, the highway division supervisor and his nine men and the repair supervisor and his assistant.

No Tax Increase

The city paid for the new buildings, constructed at a bid price of $101,899, from surplus and reserve funds accumulated over a two-year period. Thus we gained a much-needed facility without increasing local taxes or going into debt. We received a total of 11 bids on the project. We placed the contract with the low bidder, R. W. Blake, Inc., of Bethesda, Md.

This improvement is the result of action initiated by the City Council in September 1957 when they engaged Philip Mason, AIA, to prepare plans and specifications for the buildings. The work was done under the administration of Mayor George M. Miller, with actual construction under the supervision of Councilman Robert W. Collison and his Public Works Committee and financing under Councilman Clayton D. Forshee and his Finance Committee.

On Sunday, September 13th, 1959, taxpayers of Takoma Park, state county and local officials attended the formal opening of the new buildings. We held open house from two to eight P. M.

We feel this has been a sound investment, for the value of happy and contented employees is incalculable. Better morale means more work and increased efficiency. This we have achieved. ◄◄

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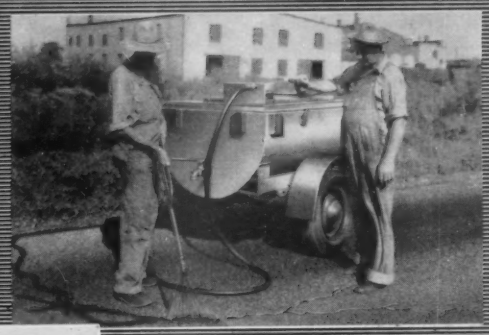
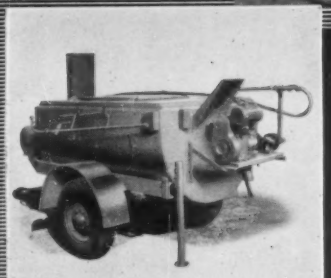
Saves Money on Patchwork





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With this Standard Steel Model "S" Kettle, "cold spots" or "burnt materials" are eliminated. You get uniformity of heat throughout the entire mass of material. Steady temperature at the correct level is maintained all day long. Easily transported — equipped with special safety features — it's a fast worker. With a motor spray attachment, it is even more efficient for road maintenance. Standard Steel also offers a complete line of crack filling pots, shoulder rollers and other road maintenance equipment.

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Asphalt Pressure Distributors, Maintenance Distributors, Patch Rollers, Supply Tanks, Tool Heaters, Asphalt Tools, Street Flushers, Construction Brooms.

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DON'T GET BURNED!

Avail yourself of

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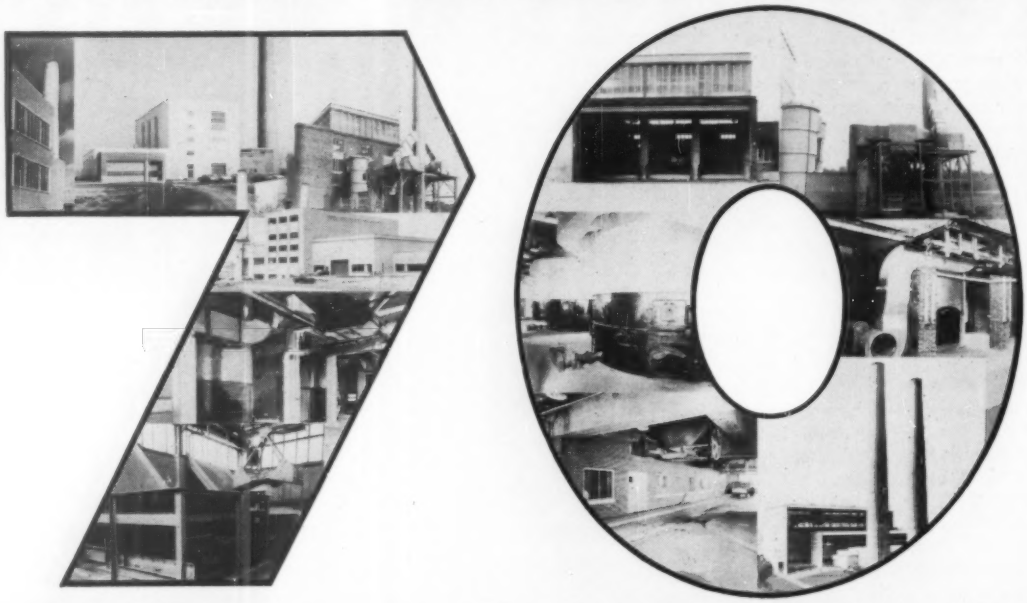

YEARS' EXPERIENCE

MORSE BOULGER has built successful municipal incinerators for more years than any other organization.

Our latest is the recently completed installation for Somerville, Mass. with a capacity of 450 tons per 24 hours.

Whatever your waste disposal problem consult Morse Boulger for the answer.

SEE OUR EXHIBIT AT THE **APWA SHOW**
New York Coliseum, August 14 through 17

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MORSE BOULGER · OUR 70TH YEAR · KERNER · KERNERATOR · INCINERATOR INSTITUTE OF AMERICA · IAI

MEMBER:
Incinerator Institute of America
Air Pollution Control Association

In two years the Sanitation Department auctioned over 3,000 autos abandoned on the city's streets.

The Department's "navy" of four tugs and 42 barges never goes to sea; they convey refuse to a huge land-reclamation project on Staten Island.

This, Too, Is Sanitation

New York City's Department of Sanitation operates its own "navy" and police force, sells used autos and has a real-estate operation in addition to the routine task of collecting and disposing of refuse and keeping streets clean

By PAUL R. SCREVANE
Commissioner of Sanitation
New York City

Most people in the public works field are familiar with the broad dimensions of a municipal sanitation operation. They know that refuse collection and disposal, street cleaning, and other important health services must be provided for great numbers of people, and that an agency head is allocated so much money to do the job.

In New York, the broad outline of the Sanitation Department's responsibility emerges in this fashion:

- **Removing refuse and cleaning up after New York's 8,000,000 population, plus nearly 1,000,000 daily visitors.**
- **Disposing of over 5,000,000 tons of refuse and demolition and trade waste.**
- **Sweeping or providing other services along some 6,000 miles of streets.**
- **Clearing snow and ice so that the normal life of the city can continue.**
- **Maintaining over 4,000 pieces of motor equipment and hundreds of buildings.**
- **Administering a 13,500-employee organization which operates under an annual budget in excess of $1,000,000,000.**

In proportion to their size and population, most large cities across the country have similarly big jobs.

But New York may be unique because *in addition* to the day-to-day chores imposed by residents and visitors to a World Capital, its Sanitation Department inherits many other tasks that add to the operational and administrative workload.

Some of these assignments add greatly to our personnel needs and are expensive to maintain. Others, although burdensome, have a compensating factor in that they produce revenue for the city.

Navy

Not many American cities have been required to maintain a "navy." True, ours is a modest naval establishment. But the four tugboats and 42 steel-well barges, that are needed to transport refuse from various parts of the city down New York Bay to a 3,000-acre Staten Island land-reclamation project, give the

(Continued on page 177)

NO SEASONAL LAYOFFS ALL SEASON PAYOFFS!

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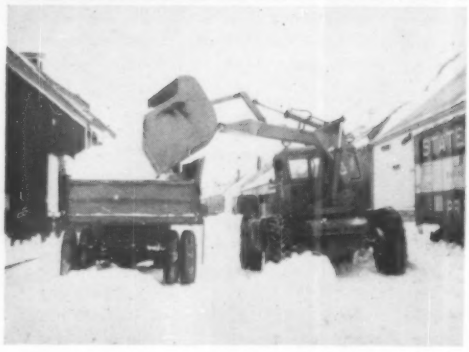
180° SPEED SWING

ALL-PURPOSE MATERIAL HANDLER



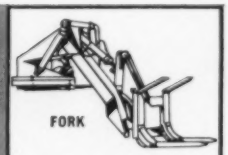
YOU PROFIT with a Pettibone Speed Swing because you never have to lay it off due to seasonal changes or job operation difficulties.

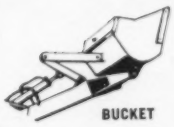
Its amazing *versatility* and *all-around applicability* puts it *on call 365 days a year!* It's always ready and able to handle every call covering a host of different kinds of jobs. In fact, the necessary downtime of a Speed Swing is held to an absolute minimum . . . just long enough for you to make a fast switch to any one of the 10 *quickly-interchangeable* attachments. Then it's off to tackle the next job on your schedule. And this goes on the year around!

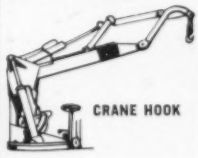
With the *exclusive* Pettibone 180° swinging boom, it handles a score of different materials *faster* and safer because it *swings the load* instead of *the loader.* There's no gee-hawing, no costly, time-consuming maneuvering all over the lot! The Speed Swing works up close to the job with maximum safety, right alongside or in back of trucks . . . out of the way of moving traffic, out of the way of other equipment, out of the way of other workmen—OUT-PERFORMING other material-handling equipment day-in, day-out . . . on job sites of every description!

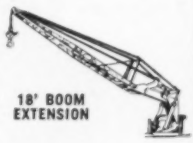
And, when winter comes, the Speed Swing will remove snow in record time without obstructing traffic. Or load out sand, cinders, or salt products for ice control. The above are just a *few* of the many reasons why the owner of a Speed Swing has *no seasonal layoffs* . . . just ALL-SEASON PAYOFFS!

Learn *all* the reasons why the Pettibone 180° Speed Swing is the *most versatile, most productive* all-purpose material handler for you. Write today!

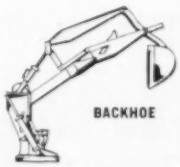

FORK

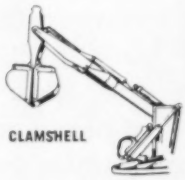

BUCKET

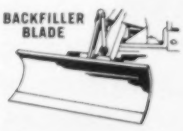

CRANE HOOK

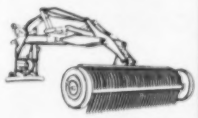

18' BOOM EXTENSION

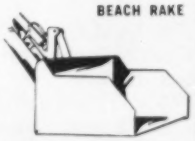
WIRE & PIPE HOOK


BACKHOE


CLAMSHELL


BACKFILLER BLADE


BEACH RAKE


4 CU. YD. SNOW BUCKET

PETTIBONE MULLIKEN CORPORATION

4700 WEST DIVISION STREET • CHICAGO 51, ILLINOIS

(Continued from page 175)

Department indeed a heavy chore.

Tugboats now cost about $600,000. A barge runs to about $150,000. Equipment, plus men and operating costs necessitate an annual expenditure of $4,700,000 for the marine phase of our overall operation.

Police Force

Similarly, the Department maintains its own police force to supplement the help we receive from the Police Department. At a cost of about $1,400,000 per year, the Department puts 250 blue-uniformed Sanitation patrolmen into the field. The full time duty of these officers is to patrol for violations of the Health Code. Besides contributing invaluable aid to the continuing *"clean city"* program pursued by the Department and by the Citizens Committee to Keep New York City Clean, the Inspectional Division annually issues between 60,000 and 80,000 summonses to Magistrates Court. Fines levied in 1959 amounted to $202,900.

New York City's staggering total of registered automotive vehicles, 1,529,424, offers a variety of problems. But aside from the purely operational difficulties they bring when parked on our 6,000 miles of busy streets, abandoned vehicles have forced the Department into the used-car business.

Each year the Department must find a way of ridding the city of hundreds of derelicts—unlicensed, unidentifiable old cars. We have solved this problem by holding public auctions which more than pay for the handling of vehicles and for the advertising and conduct of sales.

In 1959, our 35 public auctions of 1,533 pieces brought to the city a total of $34,238. Besides the revenue sales relieved the streets of unsafe, unsightly hulks — and the Department of the necessity for storing abandoned, unclaimed vehicles.

Non-Household Refuse

Perhaps one of the biggest Department "sidelines" is the disposal of non-household refuse. That is, refuse other than the 3,000,000-plus tons the Department itself collects.

All commercial establishments in New York City must engage their own carting facilities for the removal of trade waste. The Department, however, disposes of its own gleanings *and* those of private cartmen. In 1959, the Sanitation Department did a $3,000,000 business in the latter connection.

Private cartmen using Bureau of Waste Disposal incinerators, landfills, and marine (waterfront) transfer stations paid for dumping privileges at the rate of 40c per cubic yard for loose rubbish and 55c for compacted refuse.

Such haulers obtained permits to operate from the city Department of Licenses after our own Measuring Unit checked truck capacities.

Duly licensed cartmen then purchased books of (25) dump tickets, each good for the dumping of one load, at $275 per book. Even though this work has been reduced to what we believe is an efficient, fool-proof and highly effective system, its administration is a heavy chore when it must be performed along with all our other duties.

Construction Refuse

Similarly, another class of truckmen, mainly those in the construction or demolition industry, add to our income by buying books of ten tickets at $20 per book, each $2 ticket being good for the dumping of one load of clean fill or lumber at sites designated to receive this type of material.

It might be noted that the Depart-

(Continued on page 178)

Still Another New Buffalo Turbine For 1960

MODEL FST-2

USE YOUR VERSATILE BUFFALO TURBINE EQUIPMENT FOR

* Shade Trees
* Mosquito Control
* Fire Retardants
* Seeding
* Soil Stabilization
* Broadcasting
* Fly Control

Be ready to do any big job with the new MODEL FST-2. These features make it the finest on the market for spraying and/or mist dusting. • a 200 gallon stainless steel tank • up to 10 gallons per minute at 400 pounds pressure • the turbine is made of strong cast aluminum providing a very compact and effective fan. When operated at 4200 RPM it provides approximately 14,000 CFM of high velocity "Turbulent Air". • dust bin has vertical screw feed forcing dust into air stream, mechanical agitation in bin, rate of feed is adjustable to quantity desired.

Several valuable territories open. Dealers write for details.

BUFFALO TURBINE

BUFFALO TURBINE AGRICULTURAL EQUIPMENT CO., INC.

69 Industrial Street • Gowanda, N. Y.

(Continued from page 177)

ment's landfill operation puts it into the real estate business in that land-reclamation operations annually create between 150 to 200 acres of land which, at current rates, is worth about $10,000 per acre.

Because of its many years of resorting to landfill disposal, the Department gradually is working itself out of the real estate "business." Within the next 20 years or so, suitable fill areas within the city will have become exhausted and other means, chiefly incineration, will have to be found to dispose of New York's enormous discard.

At the present time, New York does not directly extract salvageable material from its refuse. But the city, through the Sanitation Department, does permit private salvage operations by companies who obtain this privilege through competitive bidding. In 1959, this grossed almost $34,000.

Another source of revenue is the sale of ashes. This has the dual benefit of providing a convenient disposal outlet and income. Contractors, cement-block manufacturers, or road-builders notify the Department of their needs and DS trucks that had accepted only clean ashes are diverted to purchaser's yards. Ashes are sold at 10 cents per yard for large purchasers or $3 a load for smaller quantities and the total revenue approximates $16,000 a year.

Although our city has a long history in salvage, more extensive reclamation under present-day conditions still is the subject of study by the Department.

Over a half century ago, there were widespread salvage operations here. These were conducted mainly through reduction plants, which produced substantial revenues from the processing of glycerins, alcohols, oils, fertilizers, hides, etc. Direct picking of saleable waste products such as paper, rags and metals also formed part of this plan.

Today, however, this type of operation, particularly rendering, would be neither profitable nor tolerable.

Sale of Metal

But there is another potential source of added revenue which the Department repeatedly has explored and which it continues to examine with a view toward incorporating it among the many supplementary jobs the Department performs.

This is the recovery of saleable metals from the approximately 500,000 tons of incinerator residue which will be accumulated annually by the Department.

Our engineering studies indicate that a profitable way could be devised whereby the Department might process incinerator residue into a central plant, which would be constructed and maintained by a salvage contractor, who would extract salable metallics. Projections indicate that this salvage, which would be mostly tin cans, ultimately would bring the Department revenue approximating $500,000 per year.

A number of metal salvaging operations are on record particularly in Southern and West Coast cities. Atlanta, Ga., is perhaps the most famous. For over ten years it has been reporting net annual revenue of about $80,000 from selling prices that have averaged, gross, about $14 per ton. In Atlanta the city underwrites recovery costs, which is a departure from the plan contemplated in New York. It has been reported that Louisville, Ky., similarly

(Continued on page 180)

HI-WAY Model E Spreader

FOR ICE CONTROL

Fast, one-man operation, fewer reloads, better traction, 4 to 40 ft. spreads of sand, salt or cinders!

3 Different Models Available: Truck mounted with PTO drive — easy to operate, economical to use. Truck mounted, engine powered (hydraulic drive available) — for more accurate, positive spreads. Dump body mounted, engine powered — use one of these lower cost rigs with several trucks, on or off truck in minutes. Capacities up to 8.8 cu. yds. mean fewer trips to the stockpile. Wide conveyor and steep 45° sides prevent bridging.

Other Model E Features

- 24" heavy duty conveyor
- 20" spinner with replaceable fins
- Removable inverted "V" over conveyor on 13 and 15' models
- Complete control from cab
- Accessory equipment for every need

HI-WAY SPREADERS Sales & Service

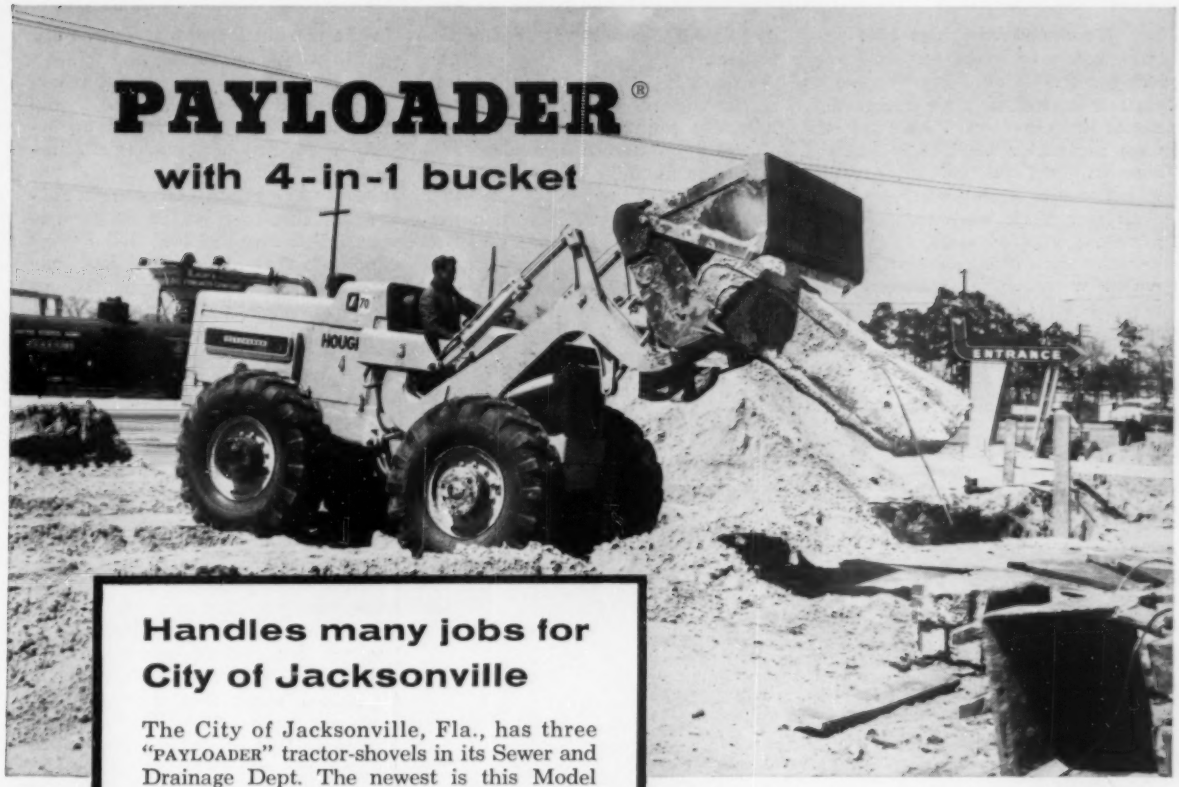
Protect Today's Motorist Through Better Ice Control

HIGHWAY EQUIPMENT COMPANY

637B "D" Ave. N. W. • Cedar Rapids, Iowa

PAYLOADER®

with 4-in-1 bucket



Handles many jobs for City of Jacksonville

The City of Jacksonville, Fla., has three "PAYLOADER" tractor-shovels in its Sewer and Drainage Dept. The newest is this Model H-70 equipped with Drott 4-in-1 bucket. How useful and indispensable this combination can be in any city's equipment pool was demonstrated on this project.

The job involved relocation of 700 feet of 15" terra cotta sewer in preparation for a new expressway. The "PAYLOADER" with its multiple-action bucket grasped and loaded out large chunks of concrete pavement, curbing and sidewalks, loaded out excess material, pulled sheet piling, backfilled the trench, and handled many other chores all over the job.

When you buy a "PAYLOADER" you get *more* than a tractor-shovel. You get the most *proven* and the most *useable* of machines because of the most complete and unusual selection of attachments ever made available for any tractor-shovel.

The 4-in-1 bucket, front or rear-mounted back-hoe, bituminous spreader, side-boom, pick-up street sweeper, leaf-loader, rotary, "V" and blade snow plows are all available to make your "PAYLOADER" a one-machine equipment pool. And there's a proven "PAYLOADER" type and size for any size municipality.

HOUGH®

THE FRANK G. HOUGH CO.
LIBERTYVILLE, ILLINOIS
SUBSIDIARY — INTERNATIONAL HARVESTER COMPANY

HOUGH, PAYLOADER, PAYMOVER, PAYLOGGER and PAY are registered trademark names of The Frank G. Hough Co., Libertyville, Ill.

The Powerful hydraulic clam action of the 4-in-1 bucket quickly grasps, moves and loads large, awkward pieces of old concrete.

With clam lip raised, the "PAYLOADER" becomes an efficient bulldozer.

THE FRANK G. HOUGH CO.
710 Sunnyside Ave., Libertyville, Ill.

☐ Send bulletin "more mileage for your tax dollar"

Name
Title
Govt'l Unit
Street
City State

8-8-3

(Continued from page 178)

is geared to a gross price of over $20 per ton. Miami, Fla., under its plan is stated to have received a net of $3.50 per ton. There, the salvage contractor built and operated his own plant and this is the system which we in New York favor.

If New York were to undertake a large-scale program, it most likely would divert all incinerator residue, which would involve barging and marine operations, to a salvage plant at Fresh Kills, Staten Island, which would be close to the Department's 3,000-acre plant reclamation project.

About 25% of New York's total refuse output—some 5,000,000 tons annually counting trade waste—ultimately becomes incinerator residue. The quantity of metals in this ranges between about 12% and 16%, depending upon the water-content of the residue. Studies indicate that, after final processing, about 3% of the total input of incinerator residue could be recovered in the form of metal. However, it must be remembered that due to the fluctuations in the market for scrap, returns are apt to vary considerably.

With our city's increasing resort to incineration—we are now in the final stages of an $80,000,000 incinerator construction and rehabilitation program — the outlook for metal-salvage has brightened. Salvaging metals from refuse is expensive because of high labor costs and physical difficulties. But extracting tin cans and miscellaneous tramp metals from incinerator residue with its high metal content and with most of the troublesome combustibles destroyed, is a matter well worth close consideration.

Work Will Increase

Normal day-to-day operations in the field of municipal sanitation give most cities ample work for their already strained resources.

But due to ever-mounting health standards and immense progress in the field and because of spiraling costs, sanitation people in their search for improvement are continually adding to their work-load.

And I think that these burdens are apt to increase rather than diminish. But it is my hope that whenever we do incur or develop new phases of work, each will have an important compensating factor: enough income to at least partly pay for itself. ◄◄

control

for algae and aquatic weeds

In small amounts, Triangle Brand Copper Sulfate controls algae growth and kills some of the more troublesome aquatic weeds. They disintegrate where they are, which prevents downstream infestation or clogged waterways.

In sewage pipes, Triangle Brand Copper Sulfate can be used in such low concentrations to control root and fungus growth that surface trees remain unaffected.

Two informational booklets, "The Use of Copper Sulfate in the Control of Microscopic Organisms," and "Copper Sulfate for Root and Fungus Control in Sanitary Sewers and Storm Drains," available on request.

Phelps Dodge Refining Corp.
300 PARK AVENUE, NEW YORK 22, N. Y.

Fire Protection in Trailer Courts

A number of fatalities in trailers during the past year caused by substandard heating equipment has resulted in a new guide on fire safety in trailer courts by the National Fire Protection Association. Trailers now represent 10% of new housing in the United States and Canada. Unlike regular dwellings, they are not controlled by building codes although a substantial proportion of the population lives in trailers permanently.

The NFPA standard covers the location of trailers, fire protection for the courts and other details necessary to produce a trailer establishment meeting reasonable standards of public safety from fire.

It was developed by the NFPA Committee on Trailers and Trailer Courts of which James O. Ford of the Nationwide Insurance Company of Columbus, Ohio, was chairman. Copies of the new standard (NFPA No. 501A, 16 pages, 40 cents) are available from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. ◄◄

NEW CATALOG Describes Latest Developments in Waste and Refuse Storage and Removal

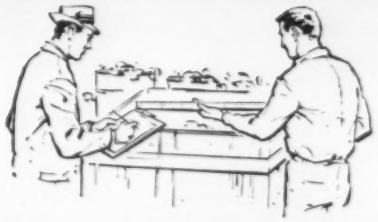
New Techniques Cut Cubic Yard Removal Costs to Record Low

This new 28-page color catalog describes remarkable new developments in waste control and disposal that have, within the last two years, obsoleted many systems now in use. Cubic yard handling costs have been reduced to a point where many firms and municipalities are saving thousands of dollars annually that they were previously spending to operate old-style equipment.

Materials handling and waste disposal are two of the few areas of large potential cost reduction remaining in manufacturing and municipal administration. This new catalog has a bearing on both of these areas of operation.

To get your copy of this new fact-filled catalog, write today.

DEMPSTER BROTHERS
Inc.
DEPT. AC-8, KNOXVILLE 17, TENN.



FREE SURVEY WITHOUT OBLIGATION
Dempster Field Engineers, located in all sections of the country, make thousands of cost-finding refuse storage and collection surveys every year, without cost or obligation. If you would like to know your disposal costs, and what—if any—avenues of improvement exist, write today on your letterhead.

28 Page Catalog FREE

Dempster Brothers, Dept. AC-8, Knoxville 17, Tennessee
Please Send New Catalog Brief 160
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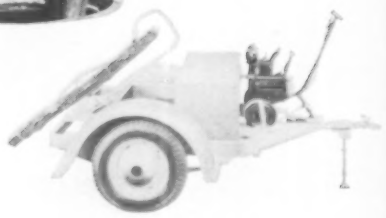
Sewer Cleaning Problems?

Solve them all with
POWERIZED
O'Brien
EQUIPMENT

O'Brien
Power
Rodder
1000



O'Brien
Power
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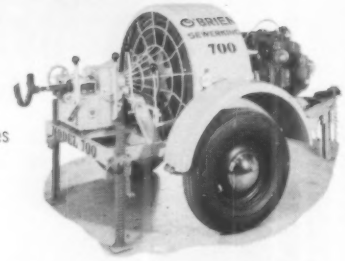
RD100

Bucket
Machine and
Dumper



Sewerking
Cable Machines

O'Brien makes a complete line of sewer cleaning equipment. Every unit is the exact answer to a specific cleaning requirement and reflects O'Brien's long experience and familiarity with the field. Economy, efficiency, and convenience of operation are built into every piece of equipment.

O'Brien Power Rodder:

matchless driving and pull-back power, unexcelled for bucket threading and general sewer maintenance. 1200 ft. capacity can be used with either $\frac{5}{16}$ or $\frac{3}{8}$-inch rod. Equipped with automatic safety throw-out, positive rod drive, and footage meter.

Bucket Machine and Dumper:

featuring exclusive O'Brien hopper. Bucket dumps into hopper; after repeated bucket travel, full hopper is dumped into truck. Use of hopper eliminates truck and traffic tie-up during cleaning operation which relieves truck for many hours of other duties while hopper is being re-filled. 9 hp., 16 hp., and 25 hp. models available.

Sewerking Cable Machines:

compact, powerful, economical cable rodder. Ideal for removing roots, grease, sludge and general sewer waste. Four Sewerking cable models available with capacities from 250 to 600-feet.

Rodding Equipment and Accessories:

O'Brien manufactures a complete line of powerized cleaning equipment accessories and universal replacement parts for all makes of sewer cleaning units.

Call or write for details or see O'Brien in action on your sewer problem. No obligation, of course!

Dept. AC860

Nationwide sales and service
Demonstrations anywhere

O'Brien MANUFACTURING CORP.

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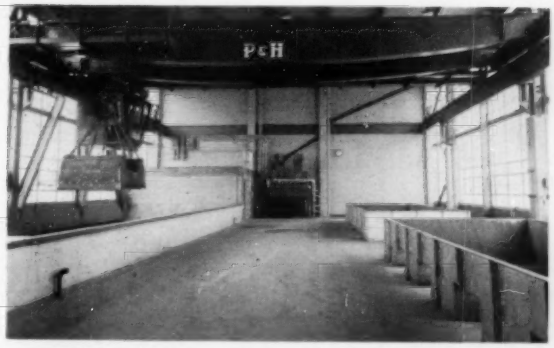
See us at the APWA Convention, New York City, booths B-83 and B-84

Cleanliness is the watchword throughout the plant as is shown by this view of the stoking floor.



A single crane serves the two furnaces; note the large charging hoppers, two for each furnace.

Two features are garage space beneath unloading floor and glass panels on opposite sides of travelling crane.

A study of factors that compared remodeling an old incinerator with building a new, in White Plains, N. Y., showed that . . .

A New Incinerator Was Best

By J. JORDAN YOUNG*

To keep up with the times and to be prepared for the future, the City of White Plains scrapped its old direct-charge incinerator for a modern bin-and-crane type. The old unit had two drawbacks: although rated at 150 tons per 24 hours, collections would have had to be made around the clock to get full benefit; and second, it gave us trouble with fly ash. Evidence of this was all over the place, and since the incinerator is located very near the business area, such a condition could no longer be tolerated.

The old plant, with its three 15-foot cylindrical furnaces, was good in its day. However, labor and repair factors had risen to the point where some kind of change was in order. Estimates on remodeling the plant ran extremely high and even after such a program we would get little modern advantage from all the money we spent. Therefore we decided to build a completely new plant and to remove the furnaces and renovate the old building for other uses.

Our new plant, designed by Metcalf & Eddy of Boston, Mass., should meet the needs of White Plains for about 30 years. It contains two furnaces each rated at 200 tons per 24 hours and cost approximately $1,500,000. Collections at present run between 120 and 135 tons per day, or about 35,000 tons annually.

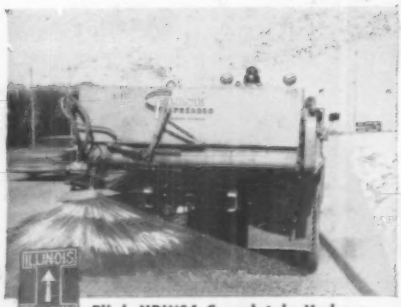
Incoming refuse is first weighed on a 24-foot, 20-ton Fairbanks, Morse scale and then discharged to a storage pit measuring 19 feet by 75 feet by 33½ feet deep. This provides 4½ cubic yards of storage volume per ton of rated capacity or roughly one day's collection. A single four-ton P & H crane with a 2½-cubic-yard Blaw Knox bucket transfers the refuse from the pit to the charging hoppers.

Each furnace has four charging hoppers that can be individually controlled from the charging floor. Each furnace also has four ash hoppers where the hot ashes are water quenched before being hauled to the disposal site located about 2¼ miles from the plant.

We purchased a new Ford truck with a 14-yard body to haul away the ashes. This unit is large enough to empty all of the ash hoppers at one time if necessary, making it

(Continued on page 184)

* As First Deputy Commissioner of Public Works for the City of White Plains, Mr. Young is responsible for highways, sanitation, garage and shop, sewers, forestry and parks, street lighting, water maintenance, and maintenance of city-owned buildings.



Flink HDWS4 Completely Hydraulic Tailgate Spreader — A fleet of these efficient rigs help keep traffic rolling on the Illinois Tollway! Left-rear spinner permits easy 2-3 lane spreads in one pass; saves material. Hydraulically operated, Cab controlled, 2-speed auger permits instant change from abrasives to straight rock salt. Volume controlled by hydraulically operated feedgate.

Select FLINK SPREADERS

When Specifications Require

- **ONE MAN OPERATION**
- **LOW MAINTENANCE**
- **LOWER COST**

Flink LMC Hopper Spreader — Handles salt, cinders and sand for heavy-duty ice control. Pea gravel and chips for seal coating. Choice of PTO, hydraulic or gasoline engine drive, Cab controlled. Uses the only power transmission of its kind in the field. No worm gears, no "out-of-straight" shafts of U-joints. Differential equalized drive.

Flink HD42 Hydraulic Drive Tailgate Spreader — Self-feeding. Handles sand, chips, cinders, calcium chloride, chat etc. Forward spread for ice control, reverses for seal coating. Spreads from width of truck to width of street, thick or thin. Replaces tailgate on present trucks. Trips for dumping just as original tail-gate did.

Flink Model SS Pull-Type Spreader —

Can't be beat for simple maintenance and operation. For low cost ice control, seal coating and dust control.

BAKER Flink SNOW PLOWS

FOR FAST, LOW COST SNOW REMOVAL!

Reversible or one-way plows for 1½ to 5 ton trucks and up. Sectional or one-piece, full length cutting edge trip. Exclusive blade-hinge weldments in place of hinges cut maintenance. Full 3¼" wear on a 6" cutting edge. Operating position adjustable 65° or 75° from horizontal.

For literature or name of nearest distributor, write:

THE Flink co.

STREATOR, ILLINOIS

5509 North Vermillion Street

(Continued from page 183)

possible to keep the fires tended at a uniform rate.

The furnaces are equipped with Flynn & Emrich sloping grates having a grate area projected on a horizontal plant of 290 square feet. The rated capacity as built amounts to 57½ pounds of refuse burned per half hour per square foot of projected grate area.

Both the secondary chambers and expansion chambers have a volume of 5,200 cubic feet. The expansion chambers are actually spray chambers and ponds of a wet fly-ash removal system, with the volume calculated from the water surface of the ponds to the underside of the chamber's suspended arches.

Fly-Ash Removal

To cope with the fly-ash problem, a series of baffles in the flue chamber are arranged to cause turbulence in the gas stream just before the gas enters the main flue to the stack. These baffles are sprayed with a water curtain so that all flying particles of soot and ash are impinged on the wet surfaces of the baffles or directly in the water curtain and carried down into a wet well. Water sprayed through a series of nozzles in the wet well keeps the fly ash in suspension.

From here the fly ash and water mixture is pumped through a Dorr-Clone classification unit that separates the water from the ash. The water is reused while the ash is pumped into the ash hopper and is carried out with the residue from the furnaces. The cleaned gases are discharged through a single 175-foot-high-by-12-foot-inside-diameter stack. Each furnace has its own Dorr-Clone and wet-well installation.

Vacuum Cleaning

The plant also contains a Spencer vacuum cleaner unit with outlets located throughout the building. The unit is located above one of the fly-ash wet wells in such a manner that all material passes through it, is ground into fine particles and discharged into the wet well with the fly ash for disposal.

Additional equipment includes auxiliary oil burners on each furnace, American Blower forced-draft fans, and Honeywell (Brown) instruments mounted on a Lincoln Electric Products furnace instrument and control board. A separate oil-fired boiler provides heat for the building. We also excavated under

(Continued on page 187)

DANLINE *Sweeping Brushes Are Sweeping the NATION...*

NEWARK

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BECAUSE DANLINE:

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Because — only a brush manufacturer with Newark's 66 years experience has the ability and facilities to develop a wire brush with the superior sweeping qualities of Danline. The success of Danline lies in the new and unique locked-in-place construction which permits a uniform fill of special round, crimped steel wire of unusual toughness. This construction means Danline gives you far cleaner, easier sweeping. In addition, Danline saves you money because of longer wear and quick assembly. Find out now about these and other benefits. Write for illustrated brochure.

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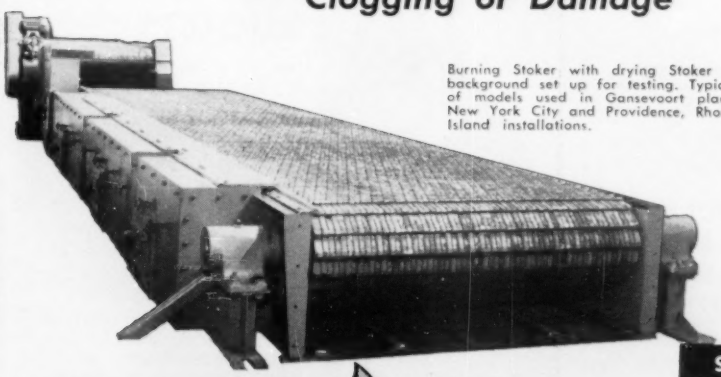
Original Overlapping Link Design on Illinois Incinerators Eliminates Possible Clogging or Damage



Burning Stoker with drying Stoker in background set up for testing. Typical of models used in Gansevoort plant, New York City and Providence, Rhode Island installations.

Overlapping Design of links or keys on both the chain-grate and bar-key models prevents clinkers or non-flammable items from catching between the links causing possible damage to the stoker and reduces sifting of material through the grates.

Cast Steel links are used on both models unless otherwise specified, as cast steel affords greater resistance to heat and abrasiveness than does ordinary cast iron.

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(Continued from page 184)

the truck unloading floor to make garage space for eight of the collection trucks.

At present we are operating the plant two shifts each day, five days a week. The day crew consists of nine men and the second shift of eight men.

Personnel facilities consist of a shower and locker room and also a lunch room in which the men can relax. The latter is equipped with a small stove, refrigerator, several tables and chairs. Glazed tile on the walls permits easy cleaning, and all personnel share the housecleaning duties.

Architecture Commended

The exterior of the building and the stack is constructed of buff-colored brick, with large glass panels on each side of the main part of the building on opposite sides of the traveling crane. The building presents a very pleasing appearance both inside and outside. It received an award from the Civic Arts Commission for excellence in design and appearance for industrial buildings in our area.

Seventy-four men operate the collection phase of the work. We have 13 packer trucks and two open units. The packers include seven Heils, four Leach units, one Gar Wood and one Roto-Pac. We collect from the residential neighborhoods twice weekly and make up to six collections a week at business and commercial establishments. Funds for this work are allocated from the General Fund.

Operation of refuse collection and disposal rests on Ross Bambace, Superintendent of Sanitation. The Sanitation Department is part of the Department of Public Works administered by Commissioner of Public Works Eric A. Andrews. ◄

Louisville's Police Automobiles

For several years we have used Ford Ranch Wagons (or station wagons) for police cruisers, ambulances, paddy wagons, emergency vehicles, etc. These Ranch Wagons are equipped with two-way communication equipment, first-aid supplies and folding stretchers. Other than trucks and a few specialized services, we use standard production passenger vehicles for the other departments.

WILLIAM F. JOHNSON
City Buyer
Louisville, Ky.

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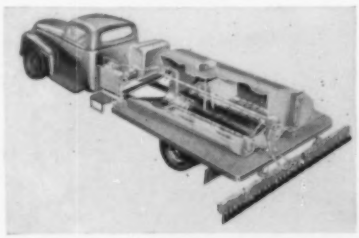
Front-end control puts the Seaman-Gunnison operator where the air is pure and visibility unobstructed. He doesn't breathe in dangerous, noxious fumes, dust and dirt. He has a clear view of his work . . . can see where he's been and going . . . has instant communication with the truck driver. With engine mounted in front and burners in the rear, fire hazard is minimized. Vital working parts are kept clear of dirt and spray mist, reducing maintenance. Front mounting of pump and engine also gives greater stability, allowing faster, safer round trips on tank refills.



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Seaman-Gunnison's new principle of tank circulation prevents overheating, burning and "hot spots." The material is continuously flushed over the combustion area of the heater flues, maintaining uniform temperatures throughout the entire contents of the tank. Coke formation and subsequent nozzle clogging are virtually eliminated.

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Air-actuated controls open and close nozzles instantly without drip or dribble. During operation, rate of flow remains constant regardless of viscosity. Seaman-Gunnison distributors are available in truck-mounted models with capacities from 800 to 2,000 gallons and trailer-mounted models from 1,500 to 5,000 gallons.

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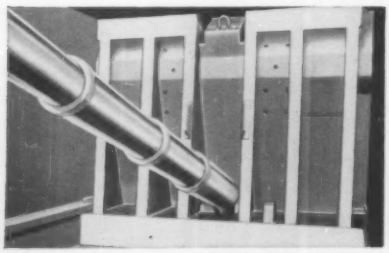
Hydro E-Z Packs help win 3 new municipal contracts

ADAM SCHLEINING, President, Santa Ana Commercial Co., Inc.

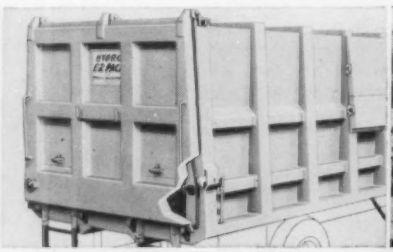
"We're saving at least $13,760 monthly with 32 Hydro E-Z Packs"—

In Santa Ana, Calif., Adam Schleining, President, Santa Ana Commercial Co., Inc., reports, "Our fleet of 32 Hydro E-Z Packs is saving us at least $13,760 monthly compared with the costs of operating open trucks. We are handling about 10% greater volume with half the number of trucks and men, even though our former equipment was self-packing." Mr. Schleining figures that E-Z Packs save two 40-minute dump trips daily per unit. And since one man with one E-Z Pack averages 375 pickups daily, efficiency is up 110% over trucks with 3-man crews.

"With this efficiency, we have won 3 new municipal contracts in 2 years on low competitive bids," Mr. Schleining said. For the full story see your Hydro E-Z Pack distributor or write us for a free copy of "The Big Squeeze."



76,600 lb. maximum pressure is applied by telescopic cylinder. E-Z Pack is world's most powerful refuse compactor.



One-piece door with strong box section framing absorbs compaction force, keeps its shape. Body stays watertight.

No hoisting! No chains or weights needed to hold down front end. The same blade that compacts refuse discharges fully packed load.

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The cutter excavates the stump to an average depth of 6½ inches.

Carbide-Tip Teeth Prove Best

. . . in stump-cutting test operations in Dayton, Ohio

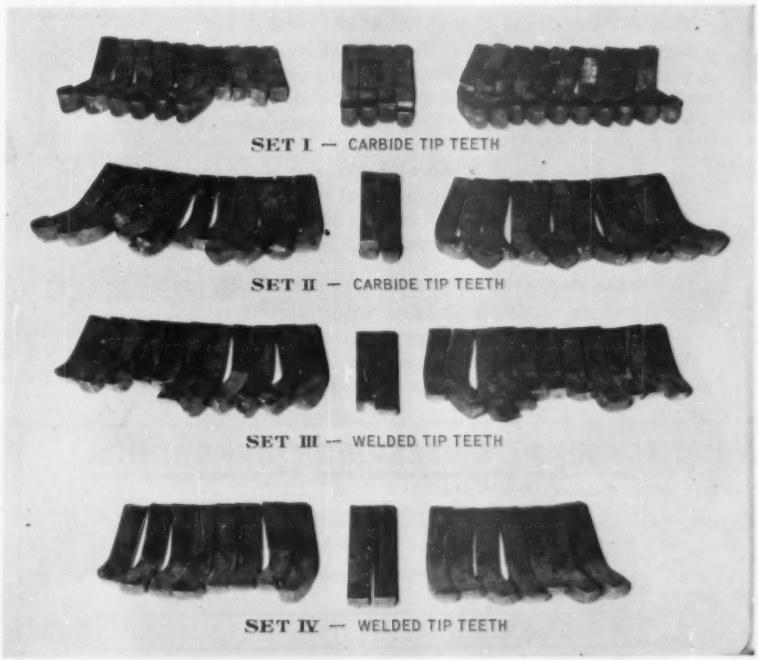
By **R. MILLER**
City Forester

Carbide-tipped teeth in the Dayton forestry bureau's Vermeer Model 10 stump cutter have proved more efficient by a wide margin than teeth with welded tips. This is the conclusion of a study of replacement teeth used in stump-removal operations during December and January, this winter. The study was aimed at determining any factors that might improve our stump-removal efficiency.

The Bureau of Forestry follows this general procedure:

- **Cut the stumps as nearly flush to the ground as possible prior to sending the stump crew out.**
- **With the cutter, excavate the stump to an average depth of 6½ inches.**
- **Use the stump chips to backfill the hole, tamping them into place; haul the excess chips away.**

(Continued on page 190)



After the grinding test, the four sets of teeth looked as shown above.

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This well-engineered and rugged machine turns brush into easy-to-dispose-of chips, at very low cost. Only the Fitchburg Chipper has an exclusive, patented Feed Plate which automatically adjusts for any size brush up to its rated capacity, making it possible to chip large or small material with ease.

This Spring-Activated Feed Plate reduces shock action and horsepower requirements since it permits chipping of larger size wood without extra power. The Feed Plate results in fast, efficient chipping without a heavy, cumbersome fly wheel. The smoother chipping action means lower maintenance, too, as well as greater crew safety.

This safety feature is important. "Because of the feed plate with its safety spring the men can't get hurt by any backthrow from the Chipper," explains the Superintendent, The Park and Shade Tree Commissions, Bridgeton, New Jersey.

Please send in the coupon for more information, and for copies of articles on chipping which appeared recently in leading publications. These feature articles describe five methods of brush disposal, and ten new ways to utilize "by-product" chips. Send for your copies, they are well worthwhile.

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Dept. AC-68, Fitchburg, Massachusetts.

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☐ Please send more information on Fitchburg Chippers.

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Address_____

City_____ Zone____ State_____

(Continued from page 189)

- **Top dress the surface with good soil and seed.**
- **Repair miscellaneous ruts and sidewalk damage.**

For our test, we measured actual grinding time with an hour-meter. Actually, most of the time required by the two-man crew is spent in travel, loading and unloading material, and positioning the grinder over the stump.

We determined the volume of stumps cut in cubic feet. In the test run, we averaged about 6½ cubic feet removed per stump with three types of teeth, and a little less than five cubic feet with the fourth. This low figure resulted from a run of small stumps.

For the test work, we arranged the teeth into two groups with carbide tips (Sets I and II in the picture), and two with welded tips (Sets III and IV). The first three sets had 24 teeth, and the fourth, 16. Sets I and II were subject to 18 and 16 hours of grinding time, each; during this period, they cut 693 and 619 cubic feet of stumps respectively. Sets III and IV were subject to only three and four hours of cutting each; during this period, they cut 83 and 144 cubic feet of stumps each. Sets I, II, and IV cut at roughly the same rate of speed, excavating somewhat more than six cubic feet of stump removed, at an average grinding time of 10½ minutes. Set III, cutting at approximately the same speed as I, II, and IV, excavated less than five cubic feet of material per stump removed, at the same average grinding time, even though the stumps were smaller. Sets I and II were used on over four times as many days when the ground was frozen and full of stone as Sets III and IV.

In the 18 hours that Set I operated, grinding 693 cubic feet of stumps, 13 of its 24 teeth remained intact. Reference to the accompanying picture will show:

Set I

Tooth	Condition
#4	Cracked, but intact
#5	Worn, ⅛th in., intact
#7, 8, 9, 10, 15, 16	Broken
#13, 24	Broken tips
#14	Intact except carbide tip

In the 16 hours that Set II operated, grinding away 619 cubic feet of stumps, 11 teeth remained intact, which is close enough to the results

from Set I to be considered the same. Again, reference to the picture will show:

Set II

Tooth	Condition
#3, 4, 6, 7, 11, 16	Tips completely worn off
#5, 10, 12, 14, 17, 19, 22	Carbide tips lost

In the three hours that Set III operated, cutting 83 cubic feet of stumps, only one tooth remained intact. The tips were worn completely off the remaining 23. In the four hours that Set IV operated, cutting 144 cubic feet of stumps, all 16 teeth were completely worn.

We hope to decrease wear and breakage in freezing weather by warming up the cutter teeth prior to normal grinding operation. Our equipment, for lack of garage space, sits out at night. We feel that by barely touching a stump surface with the grinding wheel in motion for a few minutes in the morning, and again at noon, the wear and breakage may be lessened.

The 16-tooth set was a standard set minus side cutters. We can operate two 24-tooth sets to yield the same production as three 16-tooth sets.

The crew can change the teeth in Set I in half an hour while it requires a full hour to change them in Sets II and III. The reason is that the first has only half the number of bolts since they are arranged in pairs. We use an impact wrench to make the changes.

In 1959, we removed 1,042 trees and 1,567 stumps. We still have a backlog of 631 stumps to clear. By the end of this year, we expect our stump removal program will catch up to our tree cutting. ◄◄

Board Members Ask Dollar-A-Year Status

Lakeland's Planning Board wants an increase from no salary to $1 a year. If members get the raise, they can participate in the city's group insurance program.

The city's enabling legislation prohibits planning board members from receiving any pay. The city plans to submit a legislative amendment so that Board members may qualify for the $1-a-year salary. ◄◄

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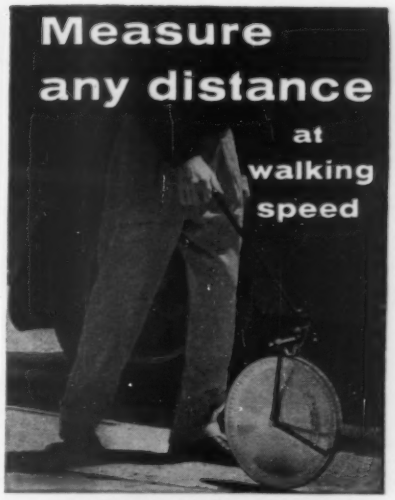

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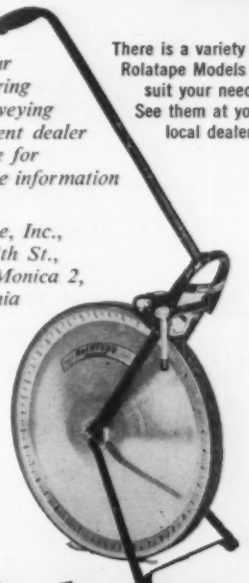

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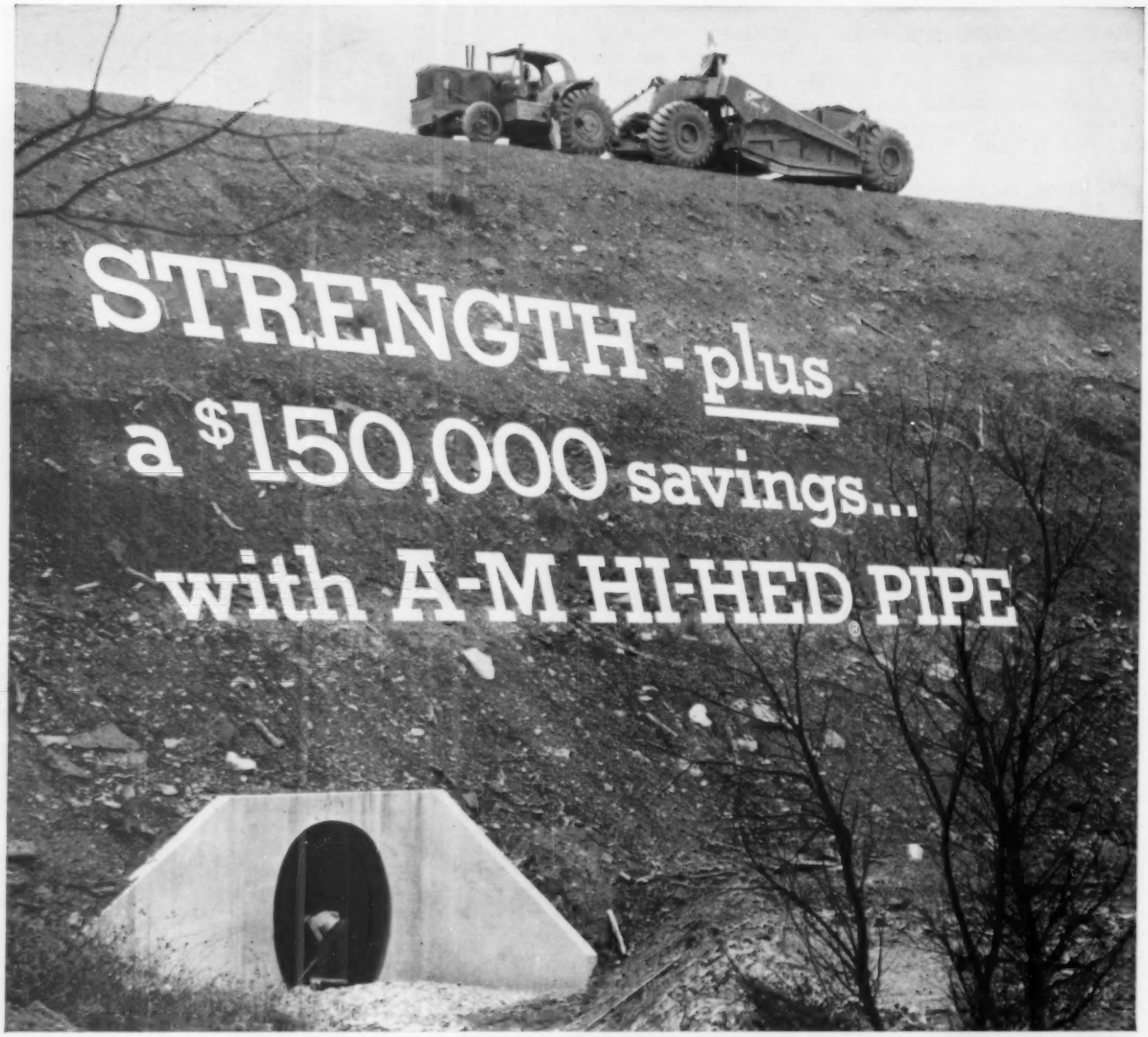

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ZONING AND PLANNING NOTES

Edited by NORMAN WILLIAMS, Jr.

Requirement of Enclosed Buildings

NEW YORK. *People* v. *Clover Dairy Corporation*, 190 New York Supplement (2d) 539 (Village Police Justice Court, August 26, 1959).

The Hempstead zoning ordinance forbade any business to be transacted either outdoors or through a window in a building, with an exception for drive-in windows in banks. This case involved a portable coin-operated vending machine selling quart containers of milk, and located at a filling station. The ordinance was challenged on the grounds that the restriction was unreasonable on its face, and that its enforcement was discriminatory because other violations (including gas stations, used car lots, and nurseries) had not been prosecuted.

In the opinion, the Court upheld the regulations in strong terms, as part of a comprehensive zoning plan for the development of the community.

> "Is the public welfare affected by permitting a business to be conducted outside of a building? It appears to the Court that confusion, chaos and disorder would follow if business in general were to be allowed to be operated in tents or upon vacant land or out in the open and the appearance of the business area would deteriorate into one large carnival with the attendant dirt, debris, and disorderliness, to say nothing of the danger from fire and other hazards. certainly, it would have an adverse effect upon the entire community, including the residential areas as well. It is the opinion of this Court that the ordinance appears to be reasonable, on its face, and bears a relationship to the health and welfare of the community and is therefore a proper exercise of the police powers of the village. The Courts have held, furthermore, that an ordinance of this nature may be upheld purely on the grounds of aesthetics."

Restriction of open-front stores and sidewalk sales are an increasingly important minor problem in zoning, and—if fully enforced—would have considerable impact on some of the older forms of retailing in the older parts of our cities. As the Court recognized here, restriction of such sales is primarily aesthetic, although at times there may be some little problem in relation to interference with pedestrian traffic on the adjacent sidewalk. However, a filling station is not necessarily the most appropriate place to enforce such regulations for enclosure.

Required Dedication—Invalid Condition on Zoning Variance

CALIFORNIA. *Bringle* v. *Board of Supervisors of County of Orange*, 345 Pacific (2d) 983 (District Court of Appeals (intermediate court), November 13, 1959).

In this case a four-acre tract, located several miles outside the city limits of Santa Ana, was zoned for agricultural purposes, and a term variance was granted for the storage of heavy excavating machinery. On an application for renewal of this variance, the local planning commission recommended such renewal for five years, subject to specified conditions—that the owner should dedicate to the county a right-of-way for an adjoining street, and should post a bond for the future installation of curbs and gutters; and the governing body imposed such conditions on the variance. The evidence was held to indicate that, because of the character of the soil, the land was unfit for agricultural purposes. The owner successfully challenged the requirement for dedication, as a condition precedent for the variance.

In the opinion the Court stated the question clearly.

> "The question here involved, however, is whether the board has power to attach conditions of this nature. The question is whether the board in such instance may, as a condition to the granting of a zone variance, require the applicant to convey to the county without compensation, irrevocable easements for road purposes, and undertake to secure the installation, without expense to the county, of curbs and like improvements to be installed upon the completion of a widening of the highway. Although it is a fact that in recent years similar conditions have been attached to permits for zoning variances by various zoning authorities, the validity of such conditions does not appear to have been passed upon by the appellate courts of this state.

The cases upholding requirements for dedication of land, as a condition to approval of a proposed subdivision, were distinguished, on the ground that they clearly involved a totally different situation.

> ". . . it has long been recognized that such subdivisions must make some reasonable provision for access by streets, and in the absence of such provisions, approval of the proposed subdivision may be withheld. It is of the very essence of such procedure that purchasers of lots in the subdivision be protected to some extent in securing to them reasonable access to the purchased property. No such situation is involved in an application for a zone variance in order to permit the use of the property for which it is fitted."

The Court therefore held that the condition had nothing to do with carrying out the general purpose of the zoning ordinance, and was void and beyond the municipal power to impose.

Anti-Discrimination Legislation in Private Housing Subpoena Power

NEW YORK. *Application of Martin*, 183 New York Supplement (2d) 566 (Supreme (lower) Court, March 31, 1959)

A new local law in New York City forbids discrimination in the rental of private housing on the grounds of race, color, or creed, with the power of conciliation and enforcement vested in the City's Commission on Intergroup Relations. In this case a real estate broker, operating primarily in Greenwich Village, posted a notice that he would refuse to comply with this law, and that it should be tested on constitutional grounds. After investigation, the Commission subpoenaed him for a hearing, and he challenged the scheduled hearing on the grounds that it would violate his constitutional rights. The Court held that this objection, directed at the validity of the subpoena, was premature.

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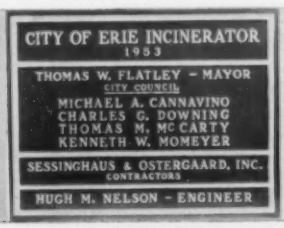

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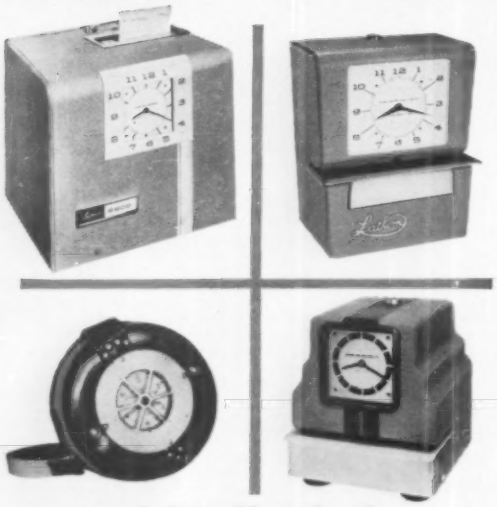

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There is a Lathem machine for (1) payrolls, (2) parking lots, (3) garages, (4) public buildings and watchmen's rounds, (5) dating and numbering papers, (6) mail arrival, (7) booking and releasing prisoners, (8) records of sequence handling, and (9) entry of important records and deeds as well as many other activities where an accurate time record is essential.

Write, wire or call for complete information.

LATHEM TIME RECORDER COMPANY

92 Third Street, N. W., Atlanta, Georgia

GENTLEMEN: Without obligation, please send me full information about Lathem time equipment, including prices.

NAME_____

POSITION_____

STREET_____

CITY_____ ZONE____ STATE_____

Plan NOW!

...for BARE PAVEMENTS ALL WINTER!

Don't get caught short by an early blast of winter that ices up your roads. Plan to use Solvay® Calcium Chloride at money-saving *bulk* rates*. It can be stored alone, or mixed with salt, outdoors under tarpaulin covers, in indoor sheds or covered bins. This method helped leading turnpikes achieve "no shutdown" records—despite severe, *unexpected,* weather conditions!

Bulk handling of Solvay Calcium Chloride is a one-man operation, both in loading and application. It can be used economically by large and small highway departments.

Calcium chloride-salt mixtures are effective at all temperatures and humidities. While salt's best range is 25-32°F., calcium chloride speeds melting at all temperatures, even down to below zero . . . provides the moisture salt needs to act. Calcium chloride liberates heat as it melts ice, which helps salt work faster. When you combine the two, applications can be lighter and less frequent. This reduces chemical consumption and lowers cost.

For *instant* skidproofing of icy surfaces, treat abrasives with Solvay Calcium Chloride. They hold fast in wind and traffic at all temperatures.

**Also available in moistureproof bags.*

Don't delay! Write us now. Request "ice control data". If you are interested in applying bulk handling to your set-up, ask for a Solvay representative to call. No obligation!

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

SOLVAY branch offices and dealers are located in major centers from coast to coast.

LEGAL NOTES AND DECISIONS

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Charles S. Rhyne, General Counsel

Airports—Creation of Airport District

Creation of Airport District does not violate constitutional ban against special law, for general law can be made applicable and only constitutional limitation controlling debt limits of such district was 8% limitation found in constitution. *Berry* v. *Milliken*, 109 S.E.2d (S.C., June 11, 1959)

City Officers—Mayors May Not Manage Water Works

In action to enjoin Mayor from acting as manager of city water works and sewer system, held such double role was inconsistent and incompatible. *Davis* v. *Doyle*, 323 S.W.2d 202 (Ark., April 20, 1959)

Civil Rights—Swimming Pool Sold For Exclusive Use of Whites

Alleged fact that prospective purchaser had publicly announced, before sale, that if it acquired title to the swimming pool same would be operated exclusively for white citizens, would not preclude municipality from selling pool to such prospective purchaser. *Tonkins* v. *City of Greensboro*, 175 F. Supp. 476 (N. C., Aug. 13, 1959)

Contracts—Duty to Maintain Construction Enforced

Where contractor erected fire station and agreed to repair and maintain station for one year after completion for repairs from damages by causes except certain enumerated ones, held contract constituted guarantee to protect construction from all damages other than those excepted. *City of San Antonio* v. *Meader*, 326 S.W. 557 (Tex. Civ. App., July 1, 1959)

Drunken Driving—Blood Tests—Statute Cannot Be Attacked on Appeal

Held, where defendant submitted to blood test in prosecution for drunken driving and the results were introduced, he could not attack validity of statute providing for submission of persons arrested for drunken driving to blood test under penalty of revocation of license, since defendant was not convicted under or by reason of statute. *Salt Lake City* v. *Perkins*, 343 P.2d 1106 (Utah, Sept. 18, 1959)

Notice of Claim—Failure to File—City Not Liable

In action by contractor to recover balance due on construction contract which it entered into with village, held village entitled to summary judgment where contractor failed to file timely notice of claim in compliance with village law. *Northampton Const. Corp.* v. *Village of Ocean Beach*, 190 N.Y.S.2d 931 (N.Y. Sup. Ct., App. Div., July 28, 1959)

Railroads—City Not Proper Party in Service Modification Case

City petition for review of decision of Department of Public Utilities in rail service modification case was demurrable for failure to show that city was properly a party before Department and had interest sufficient to make it "aggrieved." *City of Newton* v. *Department of Public Utilities*, 160 N.E.2d 108 (Mass., June 12, 1959)

Sidewalks—Bank Depository Approved

In action by taxpayers contesting ordinance granting permission to bank to install curb depository for motorist-customers on sidewalk alongside bank building, held ordinance approved. *Kirzenbaum* v. *Paulus*, 153 A.2d 847 (N. J. Super. Ct., App. Div., August 12, 1959, affirming case at 18 M.L.C.D. 24)

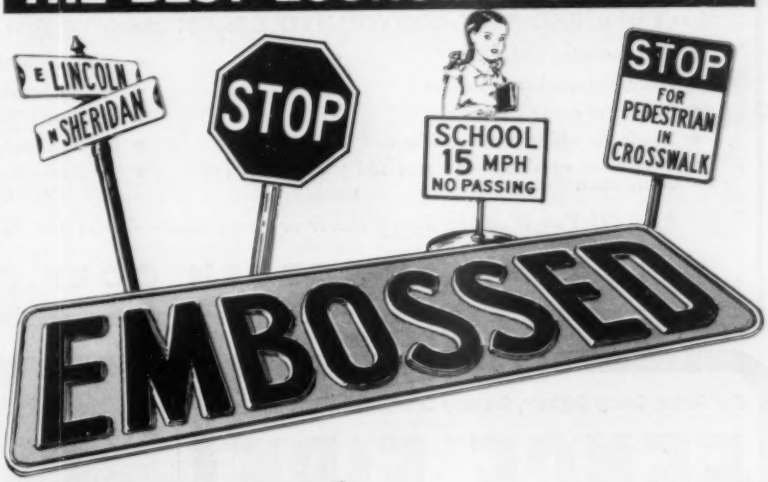
Vending Machine—Sales Tax on 1-Cent Machines Upheld

Vendor of gum sold through one cent vending machine denied injunction to prohibit comptroller of the City of New York from collecting sales tax from him on theory that he is being forced to absorb the tax contrary to law. *Queens Vending Corp.* v. *City of New York*, 189 N.Y.S.2d 959, aff. without opinion, 284 N.Y.S. 801 (N.Y. Sup. Ct., N.Y. Cty., July 30, 1959)

Water Rights—Cities to Take Only Prescriptive Rights

Cities are enjoined from taking from river system water in excess of that which their prescriptive rights entitled them. *Orange County Water Dist.* v. *City of Riverside*, 343 P.2d 450 (Cal., Aug. 20, 1959)

THE BEST ECONOMY OF ALL—



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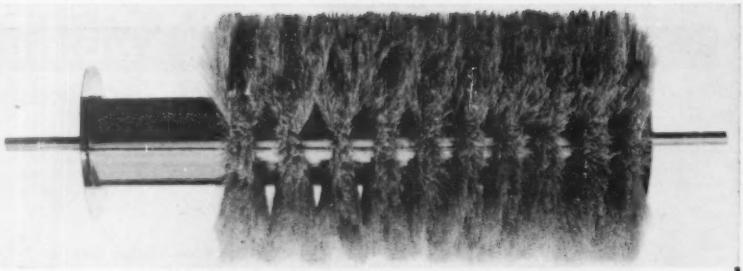

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the newest in WIRE STREET SWEEPING BRUSHES

With Ultra new RADIALLY CONVOLUTED Design that Eliminates Spacers and Winding—Reduces Core Weight—Speeds Assembly and Provides Superior Sweeping Performance and Economy.

Here's what RADIALLY CONVOLUTED DESIGN Means To Your Street and Road Sweeping:

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- Sweeps better on uneven surfaces
- Eliminates "wetting down" before using
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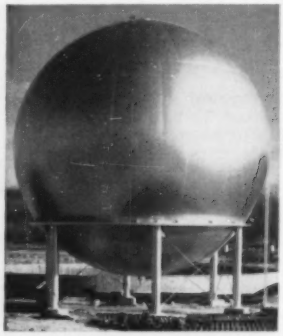
If you do your own spraying, use a *Gledhill Roadside Sprayer.* Now offers complete control of spraying width . . . economizes on chemicals and allows constant speed spraying regardless of width of spray being used.

THE GLEDHILL ROAD MACHINERY CO. *Galion, Ohio*



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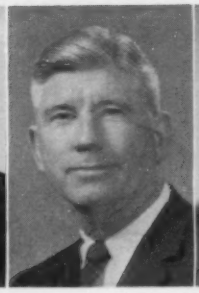
RECENT CITY MANAGER APPOINTMENTS

John A. Paulus
Rye, N. Y.

Calvin C. Henry
Madison, S. D.

T. E. Chenoweth
Springfield, Mo.



Morris M. Howard
Irving, Tex.

George Mingle
Delray Beach, Fla.

Rollin K. Snethen
Corsicana, Tex.

PAUL ALLEE, administrative assistant of Bartlesville, Okla., is the new manager of Dewey, Okla., succeeding W. Dale Baker.

PHILIP W. ANCELL, formerly town manager of Bedford, Va., has recently been appointed manager of Warrenton, Va., succeeding Sidney Shumate. Mr. Ancell was previously manager of Ashland, Virginia Beach, and South Norfolk, Va.

CAMILLE D. ANDRE, manager of Oak Lawn, Ill., was appointed manager of St. Louis Park, Minn., succeeding Tom Chenoweth, now manager of Springfield, Mo. Mr. Andre was previously a staff member of Public Administration Service.

ALEXANDER BAPTIST, manager of Hawkesbury, Ontario, Canada, was recently appointed manager of Pointe Claire, Que., Canada, succeeding Rene Labrosse.

THOMAS MCCLELLAND BAY, assistant to the manager of Danville, Va., was recently appointed manager of Westerville, Ohio, succeeding L. R. Orendorff, now manager of Franklin, Ohio.

VERNON BOXELL, manager of Mound, Minn., was recently appointed manager of Fairfield, Iowa, succeeding Larry L. Stanley. Mr. Boxell previously served as superintendent of utilities of Howard Lake, Minn.

CHARLES A. BROWN, city clerk and treasurer of Elberton, Ga., was recently appointed manager of that city, succeeding Charles M. Dixon, now manager of Fort Meade, Fla. Mr. Brown also served as director of finance of Elberton.

THOMAS E. CHENOWETH, city manager of St. Louis Park, Minn., has been appointed manager of Springfield, Mo., succeeding W. Barton Avery, deceased. Mr. Chenoweth was previously manager of Hutchinson, Kan., and administrative assistant to the manager at Kansas City, Mo.

J. ROBERT CROWELL, assistant manager of Kissimmee, Fla., was recently appointed manager of Dayton, Tenn., succeeding Jess Clark.

CLYDE H. EMMONS, manager of Paris, Tex., was recently appointed the first manager of McKinney, Tex. Mr. Emmons was previously city engineer of Abilene, Tex.

ELTON O. FEENEY, was recently appointed manager of Exeter, N. H., succeeding Allen M. Marks, now manager of Cape Elizabeth, Me. Mr. Feeney previously served as manager of Stonington, Lisbon and Old Orchard, Me.

P. E. FLOYD, administrative assistant to the manager at Alamosa, Colo., was recently appointed manager of that city to succeed Glynn Mills who resigned.

JEROME P. HARTMAN, manager of Crystal Falls, Mich., was recently appointed manager of South Burlington, Vt., succeeding David Clark.

CALVIN C. HENRY, formerly manager of Hazel Park, Mich., was recently appointed manager of Madison, S. D., succeeding Lyle E. Spiering.

ERWIN G. HILL, city engineer of Mankato, Minn., for the past seven years, was recently appointed manager of that city, succeeding Harold B. Vasey, now manager at Winslow, Ariz.

MORRIS M. HOWARD, manager of Monahans, Tex., was recently appointed manager of Irving, Tex., succeeding G. A. Scrimshire.

GORDON H. HOWE, manager of Seaside, Calif., was recently appointed manager of Saratoga, Calif., succeeding Franklin C. Backman.

J. W. JEFFREY, manager at Waco, Tex., was recently appointed manager of Beaumont, Tex., succeeding James T. Garrard. Mr. Jeffrey previously served as manager of Carrizo Springs, and Kerrville, Tex.

RAY LEGER was appointed manager of Grants, N. M., succeeding Murray D. Snyder.

J. ELDON MARIOTT, manager of Olivette, Mo., was recently appointed manager of Deerfield Beach, Fla., succeeding Clarence H. Landsittel.

JAMES M. MCLEAN, assistant city administrator of Montebello, Calif., was recently appointed manager of Irwindale, Calif., succeeding Harold Johnson. Mr. McLean previously served as manager of Needles, Calif.

CLIFFORD R. MILES, manager of Three Rivers, Mich., has recently been appointed manager of Adrian, Mich., succeeding Robert A. Finley who is now manager of Mt. Lebanon, Pa. Mr. Miles was formerly manager of Gaylord, Mich.

GEORGE MINGLE, manager of Portsmouth, Ohio, was recently appointed as manager of Delray Beach, Fla., succeeding William E. Lawson, now manager of St. Augustine, Fla.

TRUMAN O. MOORE, assistant manager of Littleton, Colo., was recently appointed manager of that city succeeding Carl D. Bryan. Mr. Moore is a retired commander in the U. S. Navy.

DAVID MUMA, contractor in Cordova, Alaska, was recently appointed manager of that city, succeeding John A. Alexander.

JOHN A. PAULUS, manager of Mt. Lebanon, Pa., since 1952 is the first manager of Rye, N. Y. He had been assistant manager in Mt. Lebanon before becoming manager.

JACQUES PERREAULT, manager of Beloeil, Que., Canada, was recently appointed as manager of St. Lambert, Que., Canada, succeeding Percy R. Martin. Mr. Perreault previously served as city engineer of St. Lambert, Que.

ROBERT W. RANK, manager of Sparks, Nev., was recently appointed manager of Durango, Colo., succeeding Robert Peart, now manager of New Ulm, Minn. Mr. Rank previously served as assistant city manager of Grand Island, Neb.

WALTER K. SMITH, manager of New Holland, Pa., was recently appointed the first manager of Shippensburg, Pa. Mr. Smith was previously assistant director of the bureau of assessments and central billing, Allentown, Pa.

ROLLIN K. SNETHEN, manager of Colorado City, Tex., for the past four years, was recently appointed manager of Corsicana, Tex., succeeding Morgan W. Works, who resigned.

F. A. STEWART, director of public works of Concord, Calif., was recently appointed manager of that city, succeeding Raymond E. Doran, Jr., now manager of Hayward, Calif.

NORMAN E. TUFFORD, manager of Holly, Mich., was recently appointed manager of Greenville, Ill., succeeding Arthur S. Johnson.

JAMES D. WESTMAN, assistant manager at Mt. Lebanon, Pa., was recently appointed manager of Hampton Township, Pa., succeeding John H. Eisenman. Mr. Westman previously served as administrative assistant and assistant finance officer of Mt. Lebanon.

ORIN F. NOLTING
Executive Director
International City Managers' Association

CONVENTIONS — WHEN AND WHERE

Conventions listed this month for the first time are indicated by an asterisk (*)

Aug. 10-12—University Park, Pa.

PENNSYLVANIA SEWAGE & INDUSTRIAL WASTES ASSOC. Annual Meeting (Penna. State University). Sec.-Treas., J. R. Harvey, 996 So. Main St., Meadville, Pa.

Aug. 14-17—Miami Beach, Fla.

NATIONAL ASSOCIATION OF COUNTY OFFICIALS. Annual Meeting (Hotel Fontainebleau). Exec. Dir., Bernard F. Hillenbrand, 1001 Connecticut Ave., N. W., Washington 6, D. C.

Aug. 14-17—New York, N. Y.

AMERICAN PUBLIC WORKS ASSOC. Annual Convention (Manhattan Hotel and New York Coliseum). Exec. Dir., Robert D. Bugher, 1313 E. 60 St., Chicago 37, Ill.

Aug. 14-19—Boston, Mass.

NATIONAL SHADE TREE CONFERENCE. Annual Meeting (Statler-Hilton Hotel). Sec., L. C. Chadwick, Dept. of Horticulture, Ohio State Univ., Columbus 10, Ohio.

Aug. 31-Sept. 2—Huron, So. Dakota

SOUTH DAKOTA MUNICIPAL LEAGUE. Annual Meeting (Marvin Hughut Hotel). Exec. Dir., J. G. Barger, P. O. Box 938, Aberdeen, South Dakota.

Sept. 5-9—New York, N. Y.

NATIONAL TAX ASSOC. Annual Meeting (Statler-Hilton Hotel). Dir., Walter J. Kress, 905 Payne-Shoemaker Bldg., Harrisburg, Pa.

Sept. 5-9—Colorado Springs, Colo.

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. Annual Conference (Broadmoor Hotel). Mgr. Dir., Hal Colling, 610 South Broadway, Los Angeles 14, Calif.

Sept. 7-9—Watertown, So. Dakota

SOUTH DAKOTA WATER & SEWAGE WORKS CONFERENCE. Annual Conference (Grand Hotel). Sec.-Treas., Don C. Kalda, State Dept. of Health, Pierre, So. Dak.

***Sept. 7-9—Atlanta, Ga.**

GEORGIA WATER & SEWAGE ASSOC.—Sewage & Industrial Wastes Section. Annual Meeting (Georgia Institute of Tech.). Sec.-Treas., Robert S. Ingols, Georgia Institute of Tech., Atlanta, Ga.

Sept. 11-15—Long Beach, Calif.

AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Convention (Lafayette Hotel). Exec. Sec., Alfred B. LaGasse, Oglebay Park, Wheeling, W. Va.

Sept. 11-16—Pittsburgh, Pa.

ILLUMINATING ENGINEERING SOCIETY. National Technical Conference (Penn-Sheraton Hotel). Managing Dir., A. D. Hinckley, 1860 Broadway, New York 23, N. Y.

Sept. 12-14—Knoxville, Tenn.

AMERICAN WATER WORKS ASSOC.—Kentucky-Tenn. Section. Annual Meeting (Andrew Jackson Hotel). Sec.-Treas., Harold F. Mount, 5400 Preston Hwy., Louisville, Ky.

***Sept. 12-14—Knoxville, Tenn.**

KENTUCKY-TENNESSEE INDUSTRIAL WASTES AND SEWAGE ASSOC. Annual Meeting (Andrew Jackson Hotel). Sec.-Treas., S. Leary Jones, 602 Cordell Hull Building, Nashville, Tenn.

Sept. 12-15—Rochester, N. Y.

INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Meeting (Manger Hotel). Dir., B. Richter Townsend, 232 Madison Ave., New York 16, N. Y.

Sept. 12-16—Chicago, Ill.

INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting (Edgewater Beach Hotel). Exec. Sec., David M. Baldwin, 2029 K St., N.W., Washington 6, D. C.

Sept. 14-16—St. Joseph, Mo.

MISSOURI MUNICIPAL LEAGUE. Annual Convention (Robidoux Hotel). Exec. Dir., Bruce J. Carl, Guitar Bldg, Columbia, Missouri.

Sept. 14-16—Saranac Inn, N. Y.

AMERICAN WATER WORKS ASSOC.—N. Y. Section. Annual Meeting (Saranac Inn). Sec.-Treas., Kimball Blanchard, c/o Neptune Meter Co., 22-22 Jackson Ave., Long Island City, N. Y.

Sept. 14-16—Virginia Beach, Va.

AMERICAN WATER WORKS ASSOC.—Virginia Section. Annual Meeting (Cavalier Hotel). Sec., E. H. Ruehl, c/o R. Stuart Royer & Assoc., 15 W. Cary St., Richmond, Va.

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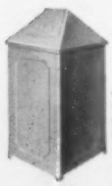

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ICE CREAM CANS • HARDENING BASKETS • HOODED and OPEN PAILS
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Sept. 15-17—Salt Lake City, Utah

UTAH MUNICIPAL LEAGUE. Annual Meeting (Newhouse Hotel). Exec. Dir., Tom McCoy, Newhouse Hotel, Salt Lake City, Utah.

Sept. 18-21—York, Pa.

PENNSYLVANIA LEAGUE OF CITIES. Annual Meeting (Yorktowne Hotel). Exec. Dir., J. N. O'Neil, 506 State St., Bldg., Harrisburgh, Pa.

Sept. 18-21—Denver, Colo.

INTERNATIONAL ASSOC. OF ASSESSING OFFICERS. Annual Meeting (Hilton Hotel). Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

Sept. 18-22—Montreal, Canada

NEW ENGLAND WATER WORKS ASSOC. Annual Meeting (Queen Elizabeth Hotel). Sec., Joseph C. Knox, 73 Tremont Street, Boston 8, Mass.

Sept. 18-20—Wichita, Kansas

LEAGUE OF KANSAS MUNICIPALITIES. Annual Convention (Hotel Broadview). Exec. Dir., E. A. Mosher, 112 West 7th, Topeka, Kansas.

Sept. 18-20—Roanoke, Va.

LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Meeting (Roanoke Hotel). Exec. Sec., Harold I. Baumes, 905 Travelers Bldg., Richmond 19, Virginia.

Sept. 19-21—Atlanta, Ga.

NATIONAL CONFERENCE FOR COUNTY ENGINEERS AND OFFICIALS. Annual Meeting (Atlanta Biltmore Hotel.) Dir., Ben F. Ostergren, County Division, ARBA, 600 World Center Bldg., Washington 6, D. C.

Sept. 19-22—New York, N. Y.

INTERNATIONAL MUNICIPAL SIGNAL ASSOC. Annual Conference (Hotel Astor). Sec., Irvin Shulsinger, 130 West 42nd St., New York 36, N. Y.

Sept. 19-23—Boston, Mass.

NATIONAL MUNICIPAL CEMETERY CONFERENCE. Annual Meeting (Statler Hotel). Sec., Vernon J. Birkhimer, Bureau of Cemeteries, 4809 W. Franklin St., Richmond 26, Va.

Sept. 20-23—Grand Rapids, Mich.

MICHIGAN MUNICIPAL LEAGUE. Annual Meeting (Pantlind Hotel). Dir., John H. Huess, 205 South State St., Ann Arbor, Michigan.

Sept. 20-23—Minneapolis, Minn.

UNITED STATES CIVIL DEFENSE COUNCIL. Annual Meeting (Lexington Hotel). Sec., Elliott R. Jackson, Municipal Auditorium, Atlanta 3, Georgia.

***Sept. 21-23—St. Paul, Minn.**

AMERICAN WATER WORKS ASSOC.—North Central Section. Annual Meeting (Lowry Hotel). Sec., Carl A. Flack, Water Dept., 216 City Hall, St. Paul, Minn.

Sept. 21-23—Traverse City, Mich.

AMERICAN WATER WORKS ASSOC.—Michigan Section. Annual Meeting (Park Place Hotel). Exec. Sec., T. L. Vander Velde, Dept. of Health, Lansing 4, Mich.

Sept. 21-23—Cincinnati, Ohio

OHIO MUNICIPAL LEAGUE. Annual Meeting (Sheraton-Gibson Hotel), Exec. Dir. J. P. Coleman, 60 East Broad Street, Columbus 15, Ohio.

Sept. 25-27—Jefferson City, Mo.

MISSOURI SEWAGE & INDUSTRIAL WASTES ASSOC. Annual Meeting (Hotel Governor). Sec.-Treas., W. A. Kramer, Div. of Health, State Office Bldg., Jefferson City, Missouri.

Sept. 25-28—Palo Alto, Calif.

NATIONAL ASSOC. OF TAX ADMINISTRATORS. Annual Meeting (Rickey's Studio Inn). Exec. Sec., Charles F. Conlon, 1313 East 60th St., Chicago 37, Ill.

Sept. 25-28—Philadelphia, Pa.

PENNSYLVANIA MUNICIPAL AUTHORITIES Assoc. Annual Meeting (Ben Franklin Hotel). Sec., Chas. F. Beeduber, 506 State St. Bldg., Harrisburg, Pa.

Sept. 25-29—Denver, Colo.

NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICIALS. Annual Meeting (Brown Palace). Exec. Sec., Charles S. Rhyne, 839 17th St., N.W., Washington 6, D. C.

Sept. 26-30—Washington, D. C.

NATIONAL RECREATION CONGRESS. Annual Convention (Shoreham Hotel). Sec., Willard B. Stone, 8 W. 8th St., New York.

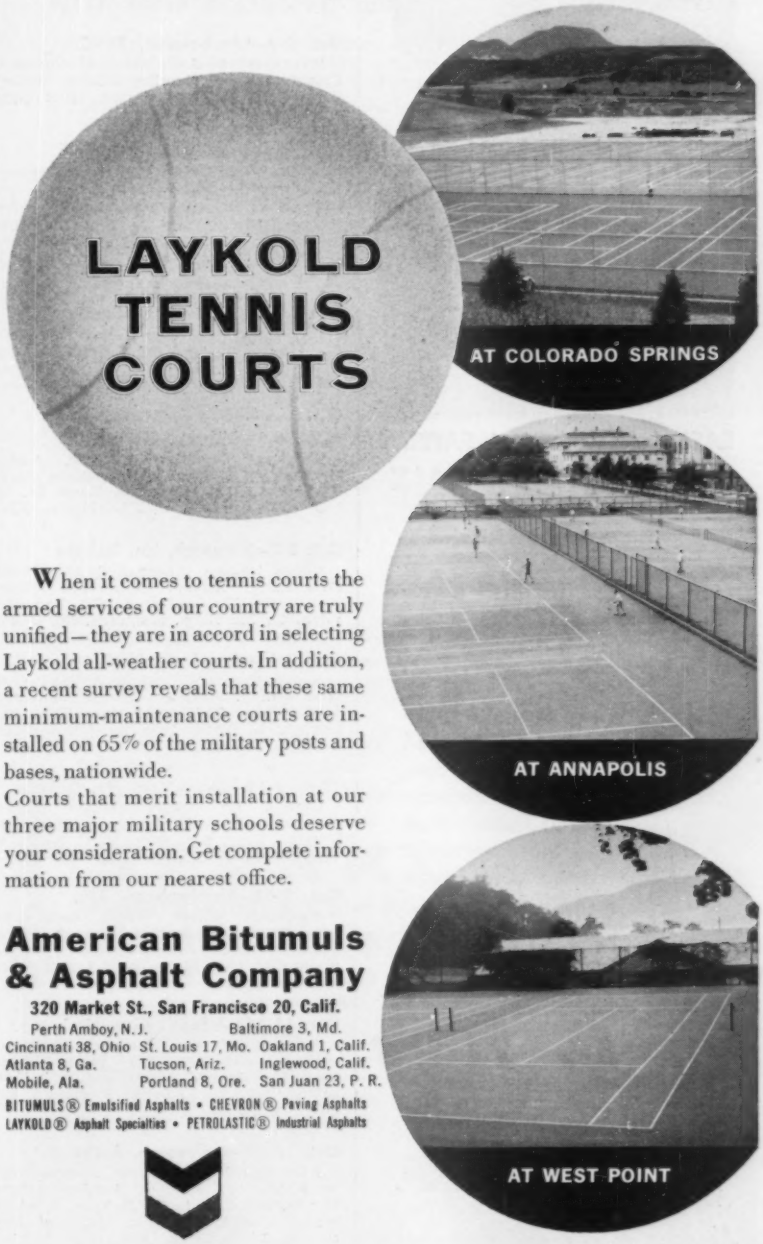
Sept. 28-30—Prince Edward Is., Can.

AMERICAN WATER WORKS ASSOC.—Canadian Section-Maritime Branch. Annual Meeting. (Charlottetown Hotel). Sec., J. D. Kline, P. O. Box 608, Halifax, Nova Scotia, Canada.

Sept. 28-30—Madison, Wis.

AMERICAN WATER WORKS ASSOC.—Wisconsin Section. Annual Meeting (Loraine Hotel). Exec. Sec., Harry Breimeister, Utilities Engr., City of Milwaukee, 607 Municipal Bldg., Milwaukee 2, Wisconsin.

(Continued on page 200)



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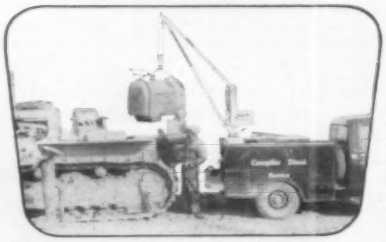

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Conventions— When and Where

(Continued from page 199)

Oct. 1-4—Springfield, Ill.

ILLINOIS MUNICIPAL LEAGUE. Annual Meeting (Leland Hotel). Dir., A. L. Sargent, 537 South 4th St., Springfield, Ill.

Oct. 2-4—Galveston, Texas

TEXAS MUNICIPAL LEAGUE. Annual Meeting (Galvez and Buccaneer Hotels). Dir., Steve Matthews, 402 Vaughn Bldg., Austin 1, Texas.

Oct. 2-5—Detroit, Mich.

NATIONAL ASSOCIATION OF HOUSING AND REDEVELOPMENT OFFICIALS. Annual Meeting (Statler-Hilton Hotel). Exec. Dir., John O. Lange, 1313 E. 60th St., Chicago, Ill.

Oct. 2-6—Washington, D. C.

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Meeting (Hotel Statler). Exec. Sec., Leroy E. Wike, Mills Bldg., Washington 6, D. C.

Oct. 2-6—Philadelphia, Pa.

WATER POLLUTION CONTROL FEDERATION (formerly the Federation of Sewage and Industrial Wastes Associations). Annual Meeting (The Trade & Convention Center). Exec. Sec., Ralph E. Fuhrman, 4435 Wisconsin Ave., N.W., Washington 16, D. C.

Oct. 2-9—Montevideo, Uruguay

INTER-AMERICAN ASSOCIATION OF SANITARY ENGINEERING. Annual Meeting (Hotel Carrasco). Sec. Gen., F. W. Montanari, 414 Walnut Street, Room 302, Cincinnati 2, Ohio.

***Oct. 4-6—Gilbertsville, Ky.**

KENTUCKY MUNICIPAL LEAGUE. Annual Meeting (Ky. Dam Village State Park). Exec. Sec., Carl B. Wachs, Room 64, McVey Hall, Univ. of Ky., Lexington, Ky.

Oct. 5-7—Bismarck, No. Dakota

NORTH DAKOTA WATER & SEWAGE WORKS CONFERENCE. Annual Conference (Grand Pacific Hotel). Sec.-Treas., W. Van Heuvilen, Capital Bldg., Bismarck, No. Dakota.

Oct. 9-11—Charlotte, N. C.

NORTH CAROLINA LEAGUE OF MUNICIPALITIES. Annual Meeting (Ovens Auditorium & Charlotte Coliseum). Exec. Dir., Mrs. Davetta L. Steed, 1009 Raleigh Building, Raleigh, North Carolina.

***Oct. 9-11—Wahpeton, No. Dakota**

LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Meeting (Wahpeton Hotel). Exec. Sec., Mrs. H. C. McCreery, 408½ Main Ave., Bismarck, No. Dakota.

Oct. 9-12—Birmingham, Ala.

AMERICAN WATER WORKS ASSOC.—Alabama-Mississippi Section. Annual Meeting (Tutwiler Hotel). Sec., Ernest Bryan, McWane Cast Iron Pipe Co., Box 2601, Birmingham, Ala.

Oct. 11-14—Atlantic City, N. J.

EASTERN WATER COMPANY CONFERENCE (formerly PENNSYLVANIA WATER WORKS Assoc.). Annual Meeting (Chalfonte Hotel). Sec., R. L. Tyler, 1 Morgan Ave., Palmyra, N. J.

Oct. 16-19—Galveston, Texas

AMERICAN WATER WORKS ASSOC.—Southwest Section. Annual Meeting (Galvez Hotel). Sec., Leslie A. Jackson, Municipal Water Works, Robinson Memorial Auditorium, Little Rock, Ark.

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Oct. 16-20—San Francisco, Calif.
INTERNATIONAL CITY MANAGER'S ASSOC. Annual Meeting (Sheraton-Plaza Hotel). Exec. Dir., Orin E. Nolting, 1313 East 60th Street, Chicago 37, Ill.

***Oct. 16-22—San Diego, Calif**
VIII INTER-AMERICAN MUNICIPAL CONGRESS. Bi-annual Meeting (El Cortez Hotel). Exec. Sec., Dr. Robert F. Wilcox, San Diego State College, San Diego, Calif.

***Oct. 17-18—Little Rock, Ark.**
ARKANSAS MUNICIPAL LEAGUE. Annual Meeting (Marion Hotel). Exec. Dir., Glenn G. Zimmerman, 416 Maple, North Little Rock, Ark.

***Oct. 17-21—Chicago, Ill.**
48TH ANNUAL NATIONAL SAFETY CONGRESS. (Conrad Hilton, Pick-Congress, Sheraton Towers Hotels). Sec., R. L. Forney, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

***Oct. 19-21—Des Moines, Iowa**
AMERICAN WATER WORKS ASSOC.—Iowa Section. Annual Meeting (Fort Des Moines Hotel). Sec.-Treas., J. J. Hail, Water Dept., City Hall, Dubuque, Iowa.

***Oct. 20-22—Atlantic City, N. J.**
AMERICAN WATER WORKS ASSOC. — New Jersey Section. Annual Meeting (Madison Hotel). Sec., A. F. Pleibel, The R. D. Wood Co., 683 Prospect St., Maplewood, N. J.

***Oct. 20-22—Walla Walla, Wash.**
PACIFIC NORTHWEST POLLUTION CONTROL ASSOC. Annual Meeting (Marcus Whitman Hotel). Sec.-Treas., Gilbert H. Dunstan, Box 176, Pullman, Washington.

Proposed Aid for Local Transportation

A bill was introduced in the Senate March 24 by Senator Harrison A. Williams, Jr., (D-N. J.) to help state and local governments improve their metropolitan mass transportation services.

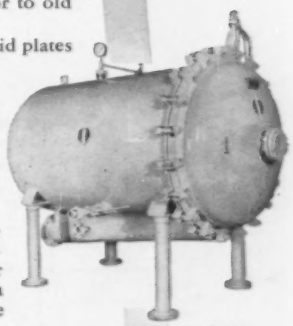
In its report to the Senate Banking and Currency Committee on the bill, the Housing and Home Finance Agency, which would administer the bill if enacted, wrote: "Because the planning of local transportation facilities is an inseparable and vital part of overall urban planning and redevelopment, this Agency is in accord with the underlying purpose of the bill—namely the encouragement of transportation systems which will not only provide good local transportation economically in the short run, but will be so planned as to be consistent with sound patterns of growth of the community."

The bill would provide loans of up to $100 million to state and local governments and their public instrumentalities to help purchase commuter equipment and help finance the construction of integrated transportation facilities in urban areas. ◄◄

Sparkling clear - Safe Swimming Pool Water

A modern design diatomite filter with new exclusive features!

1. Filter element and spray tubes have no metal to metal contact with tank, thus eliminating electrolytic action and increasing the life of tank and elements.
2. Modern spray flush-off system much superior to old backwash method of cleaning.
3. The filtering elements consist of eight flat rigid plates hung on roller carriages for easy individual inspection and removal. Plates plug into self-sealing manifold openings and seal without bolts or fastenings. This new principle of construction reduces time for servicing to a fraction of that required with the multiple tube type filters.
4. No headroom above filter is required.



Model RJ for large pools available in capacities up to 4 million gals. per day

The Sparkler Model RJ diatomite water filter reduces bacteria and removes all visible sediment and organic matter, producing a clear sparkling pool water of zero turbidity. Thus a minimum of chlorination is required for safe sterile water.

The Model RJ is a slurry feed diatomite filter with a built-in jet spray for flushing. The synthetic cloth filter media precoats quickly and washes clean rapidly. A complete fresh pre-coat of diatomite can be applied and the filter put back in operation in 15 minutes. Anyone can learn the simple procedure to clean and pre-coat a Sparkler filter in a few minutes.

The original cost of the Sparkler RJ filter is somewhat higher than some diatomite filters, but the reduced servicing and long life of the Sparkler RJ filter makes it the low cost filter in the long run. Complete recirculating systems, including a debris catcher and chlorinator can be engineered into the installation when required.

Write—without obligation—for plans and prices on your requirements. Our filtration engineers will gladly give personal service to your filtering problems.

Filtration engineering and manufacturing exclusively for over 30 years.

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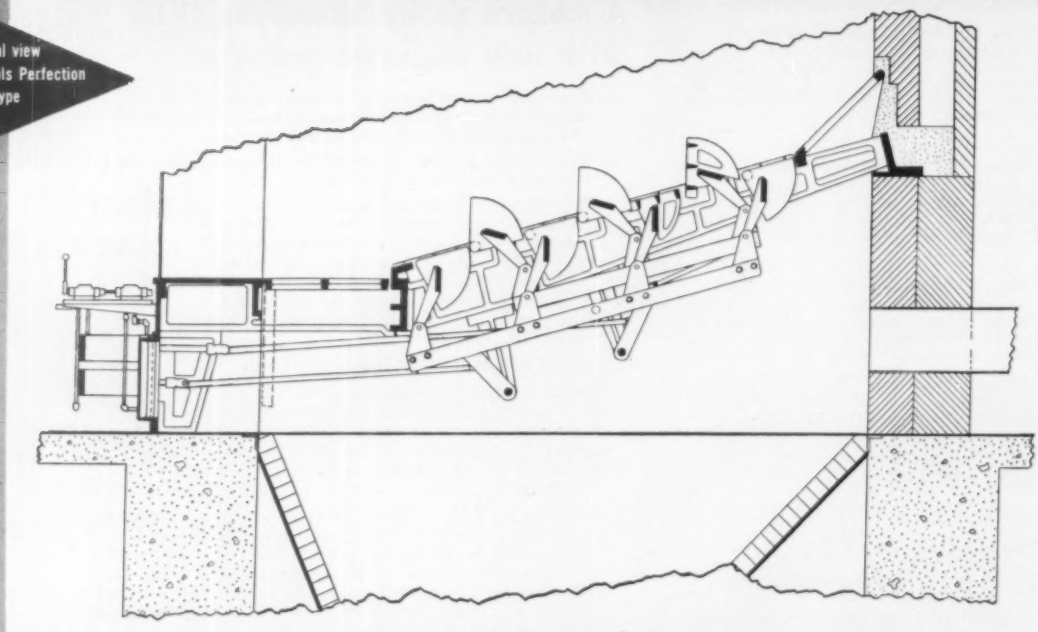
NICHOLS PERFECTION
Rocker Type Stoker Grates

Sectional view of Nichols Perfection rocker type stoker



REMOVABLE GRATE TEETH

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REDUCED LABOR

AUTO-STOKING

The Town of Eastchester, N. Y., has just contracted for a refuse incinerator plant incorporating two 100 ton furnaces equipped with the new Nichols Perfection hydraulically actuated rocker type stoker grates. Consulting Engineer is William Raisch, Garden City, N. Y.

NICHOLS PERFECTION grate systems are designed and constructed by specialists in municipal refuse incineration, drawing on the experience gained in more than 85 installations, with a total daily capacity of over 22,000 tons.

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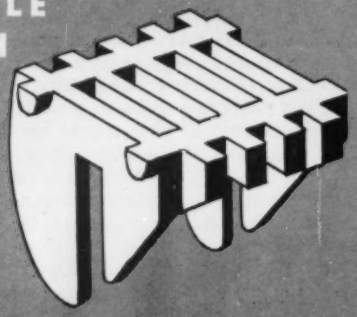

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MUNICIPAL AND CIVIC PUBLICATIONS

Publications on these pages are available from the addresses indicated and are usually free unless a price is given.

Municipal Engineering Projects

CITY OF ROYAL OAK PUBLIC WORKS IMPROVEMENTS . . . HOW TO OBTAIN THEM—*Engineering Department, Municipal Building, Room 212, Royal Oak, Michigan.* 1960. 14 *pp. Free.*

A good little pamphlet for any city. It takes the mystery out of municipal engineering projects, and helps to put the public on the side of progress. Doesn't cost much either.

All About Baltimore

HANDY FACTS ABOUT BALTIMORE'S CITY GOVERNMENT, 1960—*Issued by Commission on Governmental Efficiency & Economy, Inc., 900 Mercantile Trust Bldg., Baltimore, Md.* 1960. 8pp. *Free up to 25 copies.*

Take 450,000 tons of refuse a year, 210 million gallons of water a day, 31 million square yards of pavement, 54,500 street lights, 2,700 miles of sewers, 110 parks and you have Baltimore, Md.

Many more data are contained in a compact 3⅜ x 5-inch folder that opens out to 13¾ x 5 with the facts on both sides.

The principal items in the 1960 budget, both incoming and outgoing are given, as are tax rates and valuations, debt and fixed assets.

Master Plan For Suburbs

THE BOONTON PLANT; LIVINGSTON MASTER PLAN; THE MASTER PLAN, THE TOWNSHIP OF MONTVILLE—*Scott Bagby and Robert Catlin, City Planning Consultants, 47 Broadway, Denville, N. J.* 1959, 1960, 1960. 82 *pp.* 67 *pp.* 53 *pp.* $3 *each.*

Three practical and workmanlike plans for New Jersey suburban communities in the New York Metropolitan area.

Low Income Housing

INTERIM REPORT ON HOUSING THE ECONOMICALLY AND SOCIALLY DISADVANTAGED GROUPS IN THE POPULATION—*Metropolitan Housing and Planning Council of Chicago, 8 South Dearborn St., Chicago 2, Ill.* 1960. 61 *pp.*

Not a text of much immediate application to present urban problems. Nevertheless it adds the voices of another group of rather substantial Americans who say that rehousing of those in substandard quarters and who are in low-income, racially segregated housing, should be a national, not solely a state or local, program.

Analysis of the American Voter

THE AMERICAN VOTER—*By Campbell, Converse, Miller and Stokes. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y.* 1960. 573 *pp.* $8.50.

This book is the result of studies mad by members of the Survey Research Center at the University of Michigan. It is a scholarly work analyzing in detail the use of voting, its growth, its many sociological and psychological facets, the impact of parties, voting turnout, issues, agrarian and urban populations, the movement of populations in their effect on voting in national elections. This work will be a source of information to all concerned with voting as a means of connecting the actions of governing bodies with the preferences of those governed.

Metropolitan Government

AN ACT TO ESTABLISH THE METROPOLITAN CORPORATION OF GREATER WINNIPEG AND TO PROVIDE FOR THE EXERCISE BY THE CORPORATION OF CERTAIN POWERS AND AUTHORITY—*Queen's Printer, Province of Manitoba, Legislative Building, Winnipeg, Manitoba, Canada.* 1960. 134 *pp.* 75 *cents.*

Winnipeg gets legislation somewhat similar to Toronto's. This gives the details.

Planning and Zoning

BAIR FACTS—*By Frederick H. Bair, Jr. Chandler-David Publishing Company, P. O. Box 36, West Trenton, N. J.* 1960. 129 *pp.* $2.

Aptly named "Bair Facts," this work is a compilation of "Bairisms" on the ins and outs of planning. It is edited by Perry L. Norton, formerly director of the American Institute of Planning. The material is drawn chiefly from a newsletter

(Continued on page 204)

Way back in 1960 before citizens carried their own personal litter disintegrators, United waste receptacles served every major city . . . in streets, schools and institutions.

Of course, your community may not be that advanced—so it may be a good idea to specify United waste receptacles for the time being. United waste receptacles really last and cost so little.

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"O" Ring pressure seal . . .

Alemite grease fitting located in operating nut, easily accessible for lubrication

Safety Breakable Section

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Nuts and bolts of rust-proofed steel

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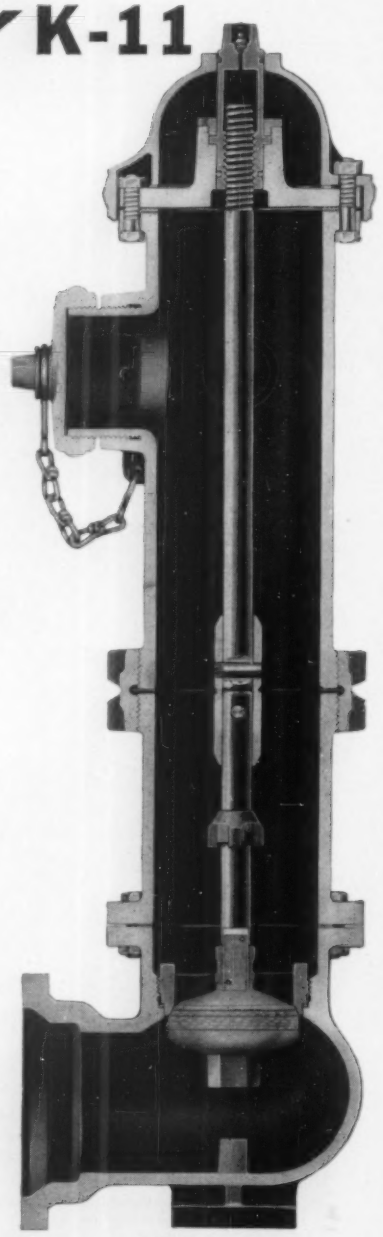
The K-11 Fire Hydrant conforms to A.W.W.A. specifications and is available in three sizes, 4, 4½ and 5 inch and in a variety of pipe end connections.



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K-11 FIRE HYDRANT

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• OFFICES AND WAREHOUSES IN PRINCIPAL CITIES

DUCTILE IRON VALVES • CAST IRON VALVES • BRONZE VALVES • INDICATOR POSTS • FIRE HYDRANTS

(Continued from page 203)

which Mr. Bair has edited since 1950 and has been arranged in the chronological order in which it was published.

The material covers a broad view of the planning scene, it is seasoned with humorous, yet pithy, examples and salted with provocative comments. Although most of the examples have a Florida locale they are on the whole similar to planning-zoning problems throughout the country. The author has a flair for painting the problems in black and white to highlight the various facets involved.

One telling point he makes is that our present planning and zoning procedures still have a very long way to go, particularly in the area of establishing standards.

Planning and zoning boards, city officials and those interested in the welfare of their community will find this book not only instructive but highly readable. To those faced with solving the diverse problems of our complex urban society, this book may help to restore a sense of humor as well as a sense of values when the "going" is rough.

Special Assessment Policies

SPECIAL ASSESSMENT POLICIES AND PRACTICES IN 13 MAJOR CITIES—*Bureau of Municipal Research, Liberty Trust Building, Broad and Arch Sts., Philadelphia 7, Pa.* 1960. 18 *pp.* $2.

While this instructive little booklet doesn't give much guidance on what is "good" practice, it is wonderfully helpful in describing current practices. One can observe also that well-run cities, with recent charter reforms, still have trouble getting rid of some poor practices.

For example, when Philadelphia paves a street or installs a water or sewer line, it pays the contractor in cash for that portion of the work financed by the city. To pay for the rest, the city assigns the contractor the individual property assessment bills and expects him to collect. Obviously, Philadelphians pay a premium for this practice.

Chicago uses a somewhat similar method. Chicago's Comptroller points out that his city has unpaid bonds issued 40 to 50 years ago. He also observes that it costs substantially more to finance special-assessment improvements under his city's system than it would if they used general-obligation bonds.

Nonetheless, these financing details are instructive and deserve study.

Youthful Civic Responsibility

GUIDE FOR THE YOUTH OF INGLEWOOD—*Administrative Office, City Hall, Inglewood, Calif.* 1960. 18 *pp.*

A little booklet developed by a local government to help parents and their children develop civic responsibility. It assumes that many run into trouble through ignorance rather than wrong intent. Its coverage is broad, running from baby sitting to morals offenses. It is a good text for others to consider duplicating.

Community Conservation And Beautification

THIS LAND OF OURS—*By Alice Harvey Hubbard. The MacMillan Company, 60 Fifth Ave., New York 11, N. Y.* 1960. 272 *pp.* $4.95.

This book is essentially an account of successful "grass roots" community conservation projects throughout the United States. It describes 180 projects from

Maine to Florida, from California to Washington and many of the states in between, as well as Alaska and Hawaii. These projects embody a wide range of conservation activities.

Although written for civic-minded groups, city officials may find the book helpful in meeting citizens' complaints and in encouraging their support of planning, conservation and beautification. The chapters devoted to road beautification, community planning and recreational facilities, community improvement and educational programs, community forests and parks illustrate what is being done in many municipalities. The account of ingenious ways in which various communities have gained citizens' help in litterbug campaigns should also prove valuable.

Development

COMMUNITY DEVELOPMENT SERIES: 1. BALANCED COMMUNITY DEVELOPMENT, 36 *pp.* 2. COMMUNITY ANALYSIS, FOUNDATION FOR DECISION MAKING, 35 *pp.* 3. COMPREHENSIVE PLANNING, GUIDE FOR COMMUNITY GROWTH AND CHANGE, 32 *pp.* 4. PLANNING URBAN RENEWAL PROJECTS, 45 *pp.* 5. MODERNIZING LOCAL GOVERNMENT, 32 *pp.* 6. FINANCING COMMUNITY DEVELOPMENT, 35 *pp.* 7. COMMUNITY LEADERSHIP, KEY TO LOCAL DEVELOPMENT, 34 *pp.* —*Construction and Civic Development Department, Chamber of Commerce of the United States, 1615 H Street, N.W., Washington 6, D. C.* 1960. 50 *cents each,* $3 the set.

Each booklet in this series describes a phase of community development, points out some of the tools used by other communities and suggests procedures that will help insure sound community development. The Chamber's interest in urban development problems dates back to 1947. The booklets, prepared by three committees of the Chamber, are primarily designed to stimulate local chambers of commerce to increase their leadership in urban development. However, anyone concerned with these problems will find them useful guides.

Government of New York City

GUIDE TO THE MUNICIPAL GOVERNMENT OF THE CITY OF NEW YORK; EIGHTH EDITION —*By Thelma E. Smith. Record Press, Inc., 214 William St., New York 38, New York.* 1960. 278 *pp.* $2.50 *plus postage.*

Few cities would have to compile a text as extensive as this, but every city should have something of this type.

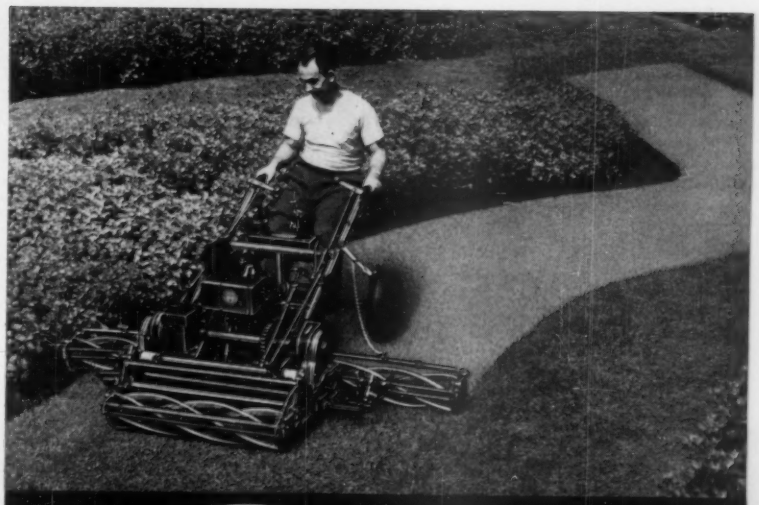
It gives the reader a guide to the vast and complex organization which is the government of the City of New York. Designed to help the layman understand this structure, it gives a factual, but not exhaustive description of the legislative, executive and judicial functions of city government in this city. Short histories show how the various departments of this city's government developed over the years.

Personnel

PERSONNEL MANUAL FOR MUNICIPALITIES—*By John C. Buechner. Graduate School, Institute of Governmental Research, Florida State University, Tallahassee, Fla.* 1960. 58 *pp.*

This personnel manual will provide a step-by-step account of how to set up a personnel department and how to maintain it. It describes how to work out job classifications, pay schedules and how to administer the schedules. It also describes recruitment procedures, examination, appointment, promotion and discipline of employees.

(Continued on page 206)



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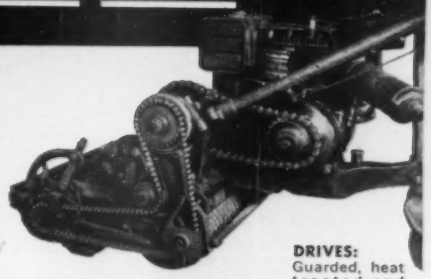
LOCKE dependability, on any size lawn, makes it possible to meet critical work schedules, reduce cutting and trimming time by ½, maintain standout appearance.



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Now is the time to take your grass cutting costs seriously. ASK YOUR LOCKE Service Dealer for the facts, or write.

(Continued from page 205)

For those cities wishing to improve the quality of personnel programs, a detailed checklist will help discover weaknesses. Both those who plan to set up personnel departments and those wishing to improve the departments they already have will find that this book will chart the way.

ADMINISTRATION & GOVERNMENT

PENNSYLVANIA—Proceedings of the Western Pennsylvania Community Growth Conference. Institute of Local Government, Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, Pa. 1959. 90 pp. $3.

TENNESSEE—How to Become a City, Procedures under each of Tennessee's Uniform Charters. TSPC Publication No. 306. Tennessee State Planning Commission, C1-121 Cordell Hull Bldg., Nashville 3, Tenn. 1960. 22 pp. 50 cents.

ANNUAL REPORTS WORTH READING

PROVIDENCE, R. I.—City Plan Commission Annual Report. City Plan Commission, Suite 103, City Hall, Providence 3, R. I. 1960. 11 pp.

ROCKVILLE CENTRE, N. Y.—Annual Report. Office of the Mayor, Village Hall, Rockville Centre, N. Y. 1959. 22 pp.

SAGINAW, MICH.—Progress Report 1958-59. Office of the City Manager, City Hall, Saginaw, Mich. 1959. 16 pp.

ST. PETERSBURG BEACH FLA.—First Annual Pictorial Municipal Report 1958-1959. Office of the City Manager Municipal Bldg., St. Petersburg Beach, Fla. 1960 12 pp. This is a pictorial tabloid newspaper-style report.

SAN ANTONIO, TEX.—Annual Report. Office of the City Manager, City Hall, San Antonio, Tex. 1960. 4 pp.

SOUTH BEND, IND.—Civic Cinema, 1960 Report of the Civic Planning Association, Inc. South Bend Civic Planning Association, Inc., 403 Lincoln Way West, South Bend 1, Ind. 1960. 36 pp. $1.

SAUSALITO, CALIF.—Annual Report. Office of the City Manager, City Hall, Sausalito, Calif. 1959. 8 pp.

TACOMA, WASH.—Tacoma 1959 Annual Report. Office of the City Manager, City of Tacoma, County-City Bldg., Tacoma 5, Wash. 1960. 8 pp. This is a pictorial tabloid newspaper-style report.

WILLIAMSTOWN, MASS.—Annual Report. Office of the Town Clerk, Town Hall, Willamstown, Mass. 1959. 139 pp.

WINDSOR, CONN.—Annual Report. Office of the City Manager. Windsor, Conn. 1959. 33 pp.

CIVIL DEFENSE

GENERAL—Instructions for Marking Contaminated Areas, Advisory Bulletin No. 128. Published by the Office of Civil and Defense Mobilization. Superintendent of Documents, U. S. Governmenting Printing Office, Washington 25, D. C. 1960. 4 pp.

FINANCE & TAXATION

MICHIGAN—1959-60 Municipal Wages, Salaries and Fringe Benefits for Michigan Villages and Cities under 4,000 Population. Information Bulletin No. 94. Michigan Municipal League, 205 South State St., Ann Arbor, Mich. 1960. 105 pp. $3.50.

MILWAUKEE COUNTY, WIS.—Capital Budgeting Spring 1959. Bureau of Government, University Extension Division, University of Winconsin, Madison, 6 Wis. 1959. 17 pp.

PHILADELPHIA, PA.—1960 Financial Program. Office of the Director of Finance, 802 City Hall Annex, Philadelphia 7, Pa. 1959. 24 pp.

PORTLAND, ORE.—Annual Financial Report. Office of the City Auditor, City Hall, Portland, Ore. 1959. 149 pp.

VIRGINIA—Salaries of Municipal Officials in Virginia Cities. Report No. 421. 9 pp. Salaries of Municipal Officials in Virginia Towns. Report No. 422. 11 pp. Salaries and Working Conditions of Policemen in Virginia Police Departments. Report No. 423. 14 pp. Salaries and Working Conditions of Firemen in Virginia Fire Departments. Report No. 424. 10 pp. League of Virginia Municipalities, 905 Travelers Bldg., Richmond 19, Va. Each $1. Free to Virginia municipal officials.

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PARKS AND RECREATION

BALTIMORE COUNTY, MD.—Chesapeake Bay Waterfront Recreation Survey. Baltimore County Department of Recreation and Parks, County Office Bldg., Towson 4, Md. 1960. 45 pp. Limited number available.

NEW YORK-NEW JERSEY-CONNECTICUT METROPOLITAN REGION—The Dynamics of Park Demand. By Marion Clawson. RPA Bulletin No. 94. Regional Plan Association, Inc., 230 West 41st St., New York 36, N. Y. 1960. 39 pp. $3.

PLANNING, ZONING, HOUSING

GENERAL—City Planning: Selected References for Citizen Groups. Exchange Bibliographies, Committee of Planning Librarians, 6318 Thornhill Drive, Oakland 11, Calif. 1960. 13 pp. $1 (lower in quantity).

GENERAL—What Every Landlord and Tenant Should Know. Citizens' Housing and Planning Council of New York, Inc., 20 West 40th St., New York 18, N. Y. 1960. 20 pp. 15 cents.

BALTIMORE, MD.—Study for East-West Expressway. Planning Commission, Department of Planning, 400 Municipal Bldg., Baltimore 2, Md. 1960. 89 pp. $2.

BROOKLINE, MASS.—Capital Improvement Program 1960-1964. Planning Board, Town Hall Annex, Brookline, Mass. 1959. 20 pp.

CAMILLUS, N. Y.—A Plan for the Development of Camillus, New York. Arthur Reed, Land and City Planning Consultant, 1047 James St., Syracuse 3, N. Y. 1959. 76 pp. $7.50.

CINCINNATI, OHIO—Capital Improvement Program 1960-1964. Planning Commission, City Hall, Cincinnati 2, Ohio. 1960. 174 pp.

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TRAFFIC

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REPRESENTATIVE MUNICIPAL BOND ISSUES

From June 2nd to July 5th, 1960

Date of Issue	*Locality*	*Amount in $1000*	*Purpose*	*Term Yrs. to Maturity*	*Rate of Int.*	*Yield %*
6/ 2/60	Ithaca, N. Y.	1,420	Gen. Obl. Sewer	15½	3.25	3.23
6/ 2/60	Stamford, Conn.	2,379	Various Improvement	10	3.30	3.27
6/ 7/60	Lynn, Mass.	1,000	Temporary Loan	½	1.79	1.79
6/ 7/60	Norwich, Conn.	2,500	School, Urban Renewal	....	3.30	3.30
6/ 7/60	South Bend, Ind.	1,000	Street Improvement	3½	3.00	2.92
6/13/60	Des Moines, Iowa	2,000	Airport, Street Imp.	13	3.25	3.23
6/14/60	Detroit, Mich.	10,000	Tax Anticipation	½	2.40	2.40
6/14/60	Mercer Co., N. J.	1,188	Improvement	8½	3.10	3.09
6/14/60	Pinellas Co., Fla.	2,500	Water Certificates	....	....	4.28
6/14/60	St. Paul, Minn.	5,633	School, Water, Various	18½	3.40	3.39
6/15/60	Struthers, Ohio	1,200	Sewer Improvement	11	4.00	3.97
6/21/60	Passaic, N. J.	1,415	Water Supply	16½	3.70	3.67
6/21/60	Paterson, N. J.	3,075	Water Supply	16½	3.70	3.68
6/21/60	West Orange, N. J.	1,129	General Improvement	10¾	3.55	3.51
6/22/60	Albany, N. Y.	2,508	Water, Pub. Imp., School	6½	3.30	3.29
6/22/60	Waterbury, Conn.	2,500	Various	12	3.40	3.34
6/27/60	Lachine, Que., Can.	2,187	City Improvement	....	5.50	5.87
6/28/60	East Haven, Conn.	1,379	Sewer	10½	3.75	3.72
6/30/60	Randolph, Mass.	1,000	Sewer	10½	3.75	3.69
7/ 5/60	Appleton, Wis.	1,925	General Obligation	....	....	3.32

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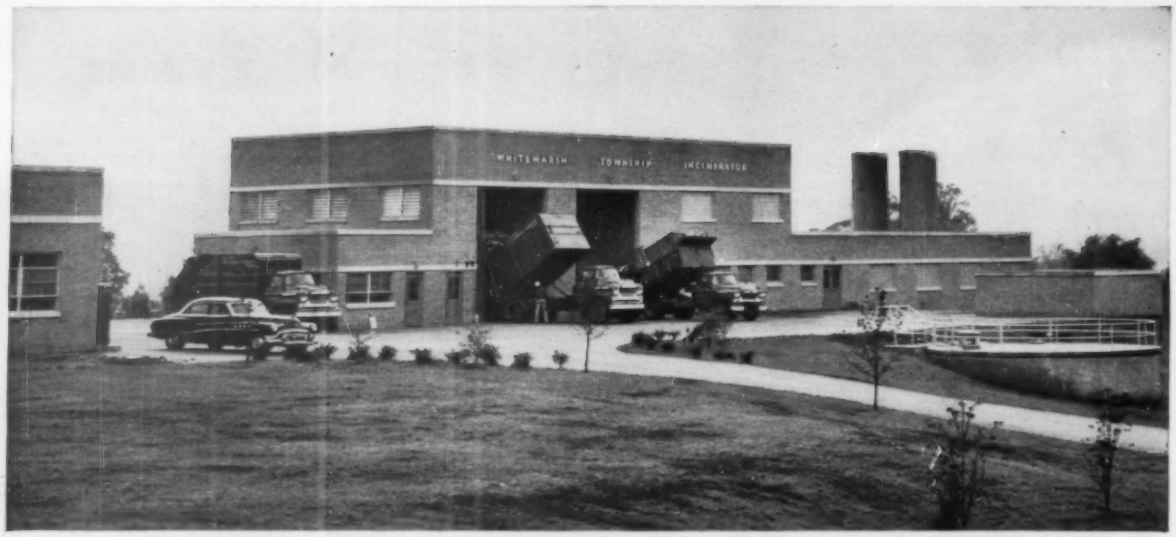
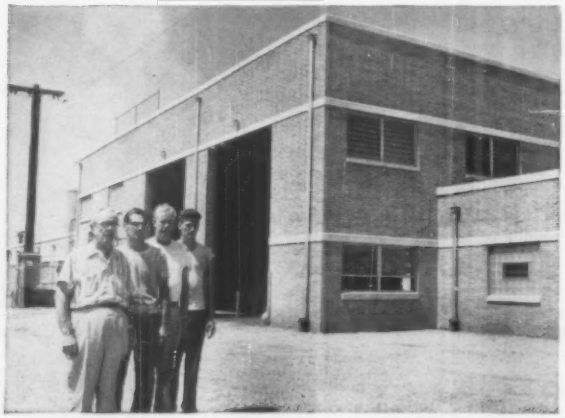


The new incinerator at Whitemarsh. Note the neat compact lines of the building and the low stacks of the wet scrubbers which emit only a plume of steam. Glace & Glace Inc. were consulting engineers for the project.

Only these four men are needed to operate the plant: One man to weigh incoming trucks and supervise unloading, a second to operate the conveyor, a third to load and drive the truck carrying away the non-combustible residue, and a supervisor.



Storage conveyor consists of two, 50-ton capacity oscillating hoppers placed side by side but independently controlled. Material is moved to feeders in a series of short reciprocating arcs. This action is self-scouring and keeps the storage trough completely clean.

NOW SERVING 50,000 RESIDENTS . . .

NEW PRINCIPLE INCINERATOR

eliminates mess and fumes—is economical to operate

Designed to burn 12½ tons of refuse *per hour* without odor or dirt, this new incinerator is in operation at Whitemarsh, Pa. In addition to garbage, tin cans, lawn trimmings and wastepaper, the incinerator handles undigested sludge from an adjacent sewage plant. Located in a residential section, plant exterior and landscaping are designed to harmonize with their surroundings.

The Dravo Incinerator has a number of unique features. Of primary significance are: the continuous flow design, which permits rapid and easy handling of the refuse; the water wall furnace, which permits the use of sufficiently high temperatures to provide thorough combustion and the elimination of noxious odors; and the wet scrubber and residue disposal system, which together promote the maintenance of healthful cleanliness.

Automatic operation has been stressed, only four men are required to run the entire plant. Present needs demand operation of the plant for only one 8-hour shift, but since it can be run on a 24-hour basis, there is adequate capacity for future needs.

The Dravo Incinerator is the economical solution to the problem of sanitary, convenient refuse disposal. For full information, write or call DRAVO CORPORATION, PITTSBURGH 22, PENNSYLVANIA.

DRAVO
CORPORATION

Refuse truck incorporates special engineering designs

The new Truxmore Pakker represents five years of development and engineering study. The unit is manufactured in two sizes, 18 and 23 cubic yards. It also can be fitted with a hydraulic loading device for detachable containers up to two cubic yards.

Truxmore Pakkers, of which there are several hundred in use, are manufactured by Truck Equipment Company, Inc., of Buffalo, N. Y. exclusively for TRUCK EQUIPMENT CORPORATION, MIDLOTHIAN TURNPIKE, RICHMOND 25, VA. All distribution and sales are handled by the Richmond company, of which Harold L. Cole is president.

The unit is cylindrical with a streamlined rear door that holds nearly three cubic yards. It is fully hydraulic, using a telescopic ram and packer blade for compacting the rubbish within the cylindrical body. It is loaded from the side and has a loading height of only 15 inches from the top of truck frame to top of the loading door.

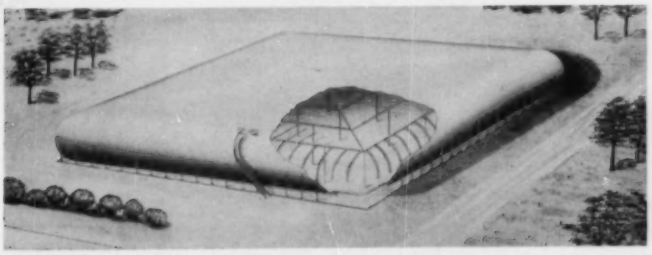
By virtue of its light sturdy design, dead weight has been eliminated. A 2½ to 3-ton truck chassis with a 120-inch cab-to-axle dimension can easily carry 23 cubic yards of compressed rubbish. The 18-yard unit only requires a 102-inch cab-to-axle dimension and a two-ton truck chassis.

In unloading the Truxmore Pakker, it is not necessary to raise the body from the truck frame. The same blade that compresses the rubbish also discharges the rubbish at the dump.

One of the new Truxmore Pakker refuse collection units in use in Sanford, Fla.

Merchandising of the Truxmore Pakker is handled by resident salesmen and resident service stations which are set up in strategic points throughout the 16 states that are presently covered. Each sales representative has in his possession a demonstrator and is in the position to demonstrate to any user at any time desired.

To help solve water storage problems



The "Cylindroid" has been developed for low-cost, large-volume water storage: it provides approximately 16% more storage capacity than do comparable cylindrical tanks. Square or rectangular in plan, it is constructed of light steel and makes full use of ground area. The community requiring a low-cost reservoir which can be built to any capacity to serve present or future needs, can obtain detailed information from GRAVER TANK & MFG. CO., 4809 TOD AVE., EAST CHICAGO, IND., division of The Union Tank Car Co.

It's widely used by municipalities

and by public utilities and by contractors who specialize in working for municipalities, for the Hydra-Hammer is a versatile, self-propelled piece of equipment with a full line of tools.

Hydra-Hammer is used to remove pavement for repair of streets or removal of pavement to uncover water lines, gas mains, conduit, etc., for repair, replacement or installation of facilities. Cities also use it for patching purposes. Palo Alto, Calif. is using its Commando Hydra-Hammer to fragment deteriorated asphaltic pavement. Another basic application is in the compaction of material filled into trenches, around foundations and pilings, etc.

There are two basic Hydra-Hammer models available—the Spartan and Commando. For literature detailing both and their applications, write OTTAWA STEEL DIVISION, YOUNG SPRING AND WIRE CORP., OTTAWA, KANS.

Newark's twin steel conduits still going strong after more than 60 years of service

The photograph above was taken in 1933, when construction of a highway required the relocation of a portion of Newark, New Jersey's twin Pequannock aqueducts. Those 26-mile-long steel lines were old-timers even then—and they're still going strong today!

Pequannock Number 1, 48 in. ID, went into service in 1892; its "twin" was completed in 1896. (In fact, nearly 250,000 ft of large-diameter steel pipe were put into service before the turn of the century.)

These venerable steel lines were cleaned and relined just once since they were first installed, and their carrying capacity is "as good as new." Furthermore, the City expects them to remain on the job for another thirty or forty years.

From coast to coast, cities have reported forty, fifty, or more years of excellent service from large-diameter steel mains. And with our vastly improved coating and lining materials, you can confidently expect even better performance from the steel pipe you install today.

If you're planning a new main, you'd be wise to consider Bethlehem Tar-Enameled Steel Pipe. You can get full information from the Bethlehem sales office nearest you.

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'Michigan' Snap-Mount Backhoe Attachment

The new "Michigan Snap Mount" backhoe attachment for Models 55A, 75A and 85A tractor shovels will take a variety of buckets and can be snapped on or off a tractor shovel in less than a minute without tools, reports Badger Division of The Warner & Swasey Co., manufacturers of the attachment.

Other major features of the fully hydraulic backhoe include 180° continuous swing, 180° bucket tilt, 12¼-foot digging depth, 10,000 pound breakaway at the bucket teeth and 15½-foot reach from center rotation. A counterbalance is included for use when the hoe is disconnected.

For additional information, write the Construction Machinery Division Clark Equipment Co., Pipestone Rd., Benton Harbour, Mich.

***FAST-WORKING** Minneapolis-Moline tractor was one of 100 in the New York City Department of Sanitation fleet that got the Empire City back to work and play after a heavy snow storm last year. It is shown clearing the way on Fifth Avenue.*

Bonding Agent Will Help Street Repair Problems

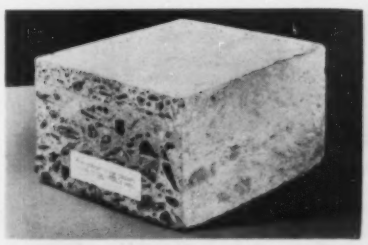
If your concrete streets or structures are damaged, you can repair them with a concrete overlay and be sure that it will stay—better than the original pour. Thiokol Chemical Corporation has test results covering a period of six years showing that polysulfide-epoxy adhesives will provide a bond for concrete overlay that was never possible before.

The tests that have been conducted by the State of California's Division of Highways indicate that when the polysulfide-base adhesive is applied immediately before a new concrete overlay, a permanent repair results.

Heretofore when new concrete has been applied over old, no bond occurred; it was possible for water to enter, freeze, and crack the concrete. Thus for a permanent repair, the entire slab usually had to be removed and new concrete applied in its place. But the cost for this generally is so high that most roads and streets are patched with various kinds of asphaltic material.

The polysulfide-epoxy will cure and adhere both to old concrete and new despite the presence of water. This bond will subsequently prevent moisture from seeping into the

(Continued on page 213)



This new adhesive, tested in state highway maintenance work, bonds concrete overlays more firmly than the original, full depth pour.

MINIATURE 2-WAY RADIO SYSTEM Keeps YOU in CONTACT in ANY Situation; ANY TIME, ANYWHERE!

the SEISCOR TELEPATH

. . . is a portable industrial quality communications system that becomes a part of your wearing apparel. It is engineered for short-range applications where dependability and convenience of use are essential. Precision circuit and durable construction provide extremely low maintenance and trouble-free operation!

- **Fully transistorized printed circuit**
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- **Long battery life**
- **For any single frequency between 20-55 mc., A.M.**
- **No license required on 27 mc. units.**

MODEL HR
Hardhat with built-in transceiver, antenna, earphones and mike. High and low noise level models available.

MODEL BR
Belt-clip transceiver and headset with built-in antenna, earphones and mike. High and low noise level models available.

Let Seiscor Engineers analyze your short-range communications problems. Example: Special units have been designed into protective clothing for crash-crew fire fighters.

FIND OUT TODAY HOW TELEPATH CAN IMPROVE YOUR SHORT RANGE COMMUNICATIONS!

Write for name of nearest TELEPATH dealer, and complete information on versatile TELEPATH communications.

SEISCOR
A DIVISION OF SEISMOGRAPH SERVICE CORPORATION
BOX 1590, TULSA, OKLAHOMA

Here's the TRUXMORE PAKKER Refuse Body!

Loading only 15" above Truck Frame

Carry Pay Loads Like This—Mass Compaction

Truxmore Container Loader—1 yard—2 yard—3 yard

1. Lowest Cost
2. Least Moving Parts
3. Less Maintenance
4. Use Smaller Truck
5. Use Smaller Tires
6. Use Less Gas
7. Use Less Oil
8. 102" C.A. for 18 yard
9. 120" C.A. for 23 yard
10. Tested & Proven
11. Fully Hydraulic
12. Lowest Loading
13. Outside Controls
14. Automatic Unloading
15. Fastest Loading
16. Fastest Unloading
17. Retains Compaction
18. No Chain to Repair
19. No Dumping
20. Push the Load Out
21. Adjustable Steps
22. More Pay Load
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26. No Sides to Bulge
27. Hundreds in Use
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(Continued from page 211)

bond area and will withstand far higher impact and compression than the concrete itself. Such applications have been in service for over seven years in California. Many other states have used this same technique.

When pot holes are to be repaired, it often proves economical to use a polysulfide-epoxy mortar to fill the hole since the highway may be open to traffic immediately. It also means that regular mixing equipment may be employed. The mortar is made simply by taking the combined ingredients of the adhesive and mixing the liquid with aggregate in various ratios. The resultant mortar is then applied to a cleaned pot hole and trowelled. Because graded aggregate is used, the patch will support traffic immediately so there is no down-time on the road.

The adhesive can be used to seal concrete surfaces of the roadway to prevent further deterioration due to salt intrusion. In this technique the adhesive is applied as a varnish might be. Since the adhesive is clear, however, it will not be evident after curing.

In order to apply grit to a highway intersection or bridge roadway for skidproofing purposes, the grit is spread immediately after the coating is applied. The grit is then bonded tightly to the surface.

Thiokol makes only the polysulfide liquid polymer which is one of the principal ingredients of the adhesive. Actual formulation is done by companies through the country who sell the compounds directly and through building industry distributors.

For additional information write THIOKOL CHEMICAL CORP., 780 N. CLINTON AVE., TRENTON, N. J.

Warning Light Protects Working Areas During Daylight

King-size No. 685 warning light, just introduced by R. E. DIETZ Co., 225 WILKINSON ST., SYRACUSE 1, N. Y., provides an extra safety of margin for men working at job sites during daylight hours when emergency repairs must be made quickly in the midst of heavy traffic or poor visibility conditions.

It can be used either on a warning mast type mounting that contains two 9-volt hotshot batteries or on an extendable metal tripod that raises the flasher to a height 11½ feet above-ground. Tripod arrangement is used to allow passing motorists to see the flasher even from behind parked work vehicles or the end of a long row of cars.

The portable flasher is finished in beacon yellow and available with either amber or red lenses. It is clearly visible in daylight, and has an 8-inch parabolic reflector lens equal in size to that of an ordinary traffic signal. Its transistorized circuit produces 1365 candle power at the rate of 50 flashes per minute over a 130-hour period. Equipped with a carrying handle and mounting bracket, it weighs 12 pounds without batteries.

A-C Expands Engine Line

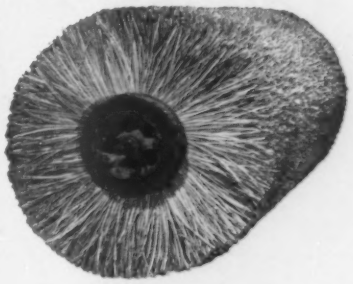
Allis-Chalmers has expanded its line of gasoline and natural gas engines with the addition of the G-138, a new 4-cycle, 4-cylinder, 138-cubic-inch piston displacement unit that develops 39 bhp at 1800 rpm.

The G-138 power unit is 46 inches long, 18 15/16 inches wide, and 30½ inches high to the top of the radiator. The engine weighs 402 pounds; the power unit, 622 pounds.

The G-138 has a heavy-duty Allis-Chalmers clutch power take-

(Continued on page 214)

FIBRES



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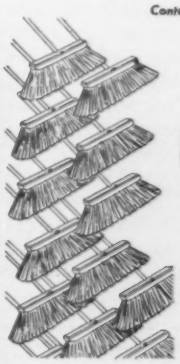

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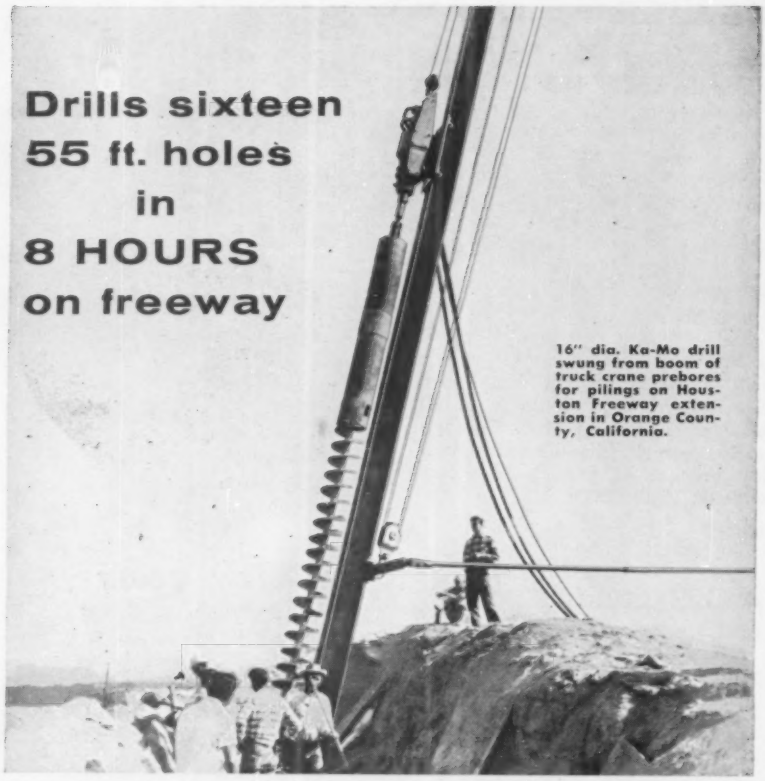

16" dia. Ka-Mo drill swung from boom of truck crane prebores for pilings on Houston Freeway extension in Orange County, California.

Ka-Mo 16" drill sets record pace preboring for pilings on Houston Freeway

Bertran Drilling Co., contracted to prebore holes for cast-in-drilled hole concrete pilings on construction of Houston Freeway extension in Orange County, Calif. Job called for drilling a series of vertical and battered holes — 16" in dia. — with various depths to 72 ft. To handle work, Bertran brought in a Ka-Mo vertical drill, powered by a 34 h.p. self-contained hydraulic motor. Swung from boom of 25-ton truck crane, the 16" dia. drill bored as many as 16 holes — 55' deep — in 8 hours! At several places on job — same drill also bored eight 72-ft. holes in one 8 hr. shift. Record production — 2 to 1 over any other machine owner is familiar with — was obtained by using continuous sectionalized drill flights.

10 to 15% saving in concrete

Vic Zonver, owner of Bertran Drilling reported an unexpected saving in amount of concrete used to pour pilings bored by Ka-Mo drill. Normally, by preboring with conventional systems, hole needs 10 to 15% more concrete than estimated theoretical volume. Drilled holes by Ka-Mo continuous-auger system required only about 1% more concrete.

Pays to check

Whether your work involves angular, vertical, or horizontal drilling, it will pay you to check the Ka-Mo line. Drill sizes 2" to 48" diameter, and larger — sectionalized lengths — air, hydraulic, electric, gasoline, or diesel powered. Engineering service is always available for these special installations. Just write or call.

Mail to: KWIK-MIX CO., Ka-Mo Tools Dept., Port Washington, Wis.

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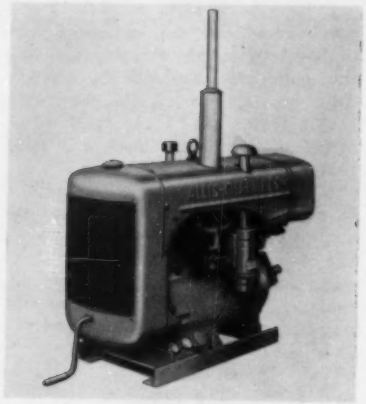


The 39-hp Allis-Chalmers G-138 engine with 138 cubic inch piston displacement.

(Continued from page 213)

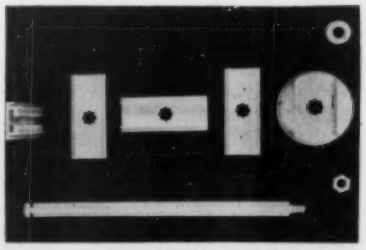
off and a large-diameter flywheel for easy starting and smooth pick-up of loads. Magneto ignition is standard. A 12-volt distributor ignition and heavy-duty magneto for use with natural gas are optional.

The new engine is a companion to the A-C G-149 and G-226 engines. For additional information, write ALLIS-CHALMERS MFG. CO., TRACTOR GROUP, BOX 512, MILWAUKEE 1, WIS.

Street Sign Hardware

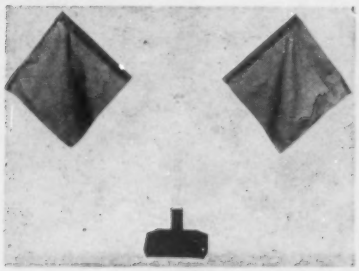
Cameo's all-aluminum, all-new hardware for street name signs combines clean, functional design with rugged durability. A "theft-proof" saddle cap replaces the old finial-type assembly. An 8-pointed star-shaped ¾-inch extruded center rod makes a positive and simple method of adjusting the angles of the sign faces to correspond with the installation on the street intersections. Matching holes in the extruded saddles lock the rod in place. Ease of assembly and freedom from maintenance are added features.

The new Cameo hardware is available for top of pole criss-cross, cantilever, and cantilever criss-cross at sides of pole. All types will fit both 6-inch and 9-inch



plates. For additional information, write California Metal Enameling Co., 6904 E. Slauson Ave., Los Angeles 22, Calif.

New Traffic Warning Device



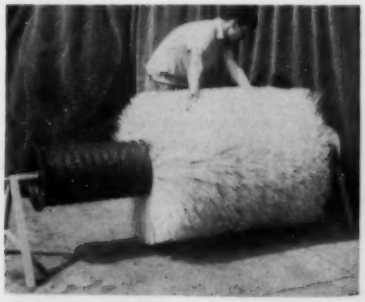
Traffic Island is the name West Side Iron Works, Inc., Grand Rapids, Mich., gives to its latest traffic safety device.

The unit is constructed of steel and has a nonslip black base that is heavily weighted. Its 26-inch high main tube is yellow (reflectorization optional) and the red cap at the top of the tube is removable to permit storage of the two 16″ x 16″ red warning flags when the Traffic Island is not in use. For night-time use, a flasher may be installed.

For additional information, write West Side Iron Works, Inc., 327 Front Ave., N. W., Grand Rapids 4, Mich.

Improved Street Broom

There are no cores to buy when you use Rynal's new prefabricated Radax broom for your street sweepers. The broom fibers are bound into a steel channel; the channel is then formed into a coil like a coil spring. The end of the coil is fed into the cable trough at the end of the broom core and spiraled through to the other end. The coil is then anchored at each end (fasteners furnished). The core loading operation is completed in less than two minutes.



In the process of manufacture, the broom fibers are grouped into tufts for greater stiffness and improved sweeping efficiency.

Radax brooms are unusually low in price. They are made for all types of street sweepers by Rynal Corp., Dept. D. 114 St. Joseph St., Arcadia, Calif.

Asphalt and Tar Kettle Burners

Flamegas Detroit Corp., 12901 Auburn Ave., Detroit 23, Mich., announces a complete line of six portable and permanent-mounting LP gas-operated asphalt and tar kettle burners.

These burners require neither pumping nor generating and fit most asphalt and tar melting equipment.

(Continued on page 217)

GOOD ROADS "CHAMPION" SNOW PLOWS...

REVERSIBLE • ONE-WAY • V-PLOWS • RIGID PLOWS

Good Roads snow plows perform smoothly and efficiently under the most adverse snow removal conditions. These rugged, heavy-duty plows are engineered to provide safe, speedy snow removal at low cost.

Models 100 Reversible and 700 One-Way Plows are equipped with the exclusive Good Roads spring-cushioned, safety-blade trip device with automatic return for safe plowing at high speeds, protecting men and equipment.

REVERSIBLE TYPE: Ideal for use in congested areas . . . blade is easily positioned to move snow to the right, left, or straight ahead.

ONE-WAY PLOW: Designed for high-speed, large capacity snow removal from long stretches of open road . . . swivel action allows plow to follow road contour.

V-PLOW TYPE: Built for tough going in deep snow, bucking drifts, opening blockades or widening cuts . . . ideal for highway and turnpike plowing in heavy snowfall areas.

For complete information write:

GOOD ROADS MACHINERY CORP., Minerva, Ohio

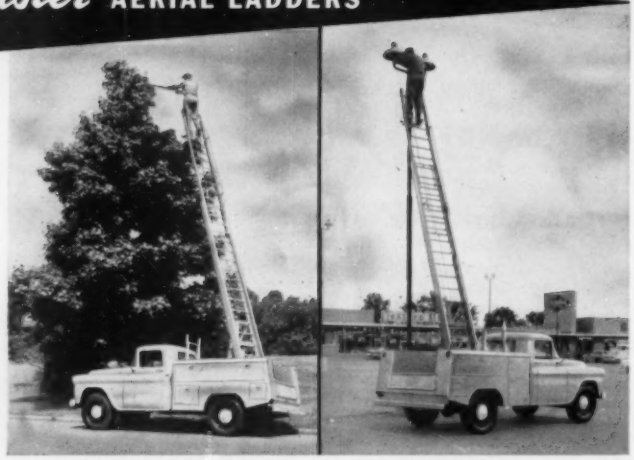
Good Roads Machinery

Scavenger • Leaf Collectors • Leaf Loaders • Mulch-Vac Sweepers • Asphalt and Aggregate Spreaders • Snow Plows • Ice and Sleet Control Spreaders

SAFE • EFFICIENT • ECONOMICAL

Two hydraulically-elevated models in 26′ and 30′ sizes. Model ML elevates by a manual pump; Model LH has an electric pump driven by truck battery. Both ladders manually extend and rotate 360 degrees.

POWERS
Service-Master® AERIAL LADDERS



Exclusive construction features include lower rails of formed steel, upper rails of durable spruce and a simple hydraulic system*. . . assuring many years of dependable, maintenance-free service. Optional truss rod insulators guard against shock.

**Nothing can go wrong that cannot be repaired locally.*

WRITE FOR LATEST BULLETIN AND
NAME OF NEAREST DEALER.
IMMEDIATE DELIVERY IN ALL STATES.

McCABE-POWERS BODY COMPANY
5900 NO. BROADWAY • ST. LOUIS 15, MO.

TARCO *Dump Body* HOPPERS for Straight De-icing Salts

Gravity feed . . . **no moving parts.**

Tarco "Watchman" Hoppers in two sizes: **Model 3Y—3 cu. yd.; Model 5Y—5 cu. yd.** (Model 1Y—1 cu. yd. for "Jeeps" and pickups). **All welded** steel. **Top screens** and **tie-down clamps.**

Rugged "Watchman" Hoppers used with Type V-3 Electric Cab-Controlled "Scotchman" Spreaders make **ideal one-man operated spreaders.** Spread with body in normal "down" position. Install or remove the Hopper and Spreader in 20 minutes.

See your Tarco "Scotchman" Dealer about liberal trade-in allowances.

TARRANT MFG. CO.
23 Jumel Place, Saratoga Springs, N. Y.

Where you want nothing to grow

SS WEED-KILLER

Gets them *fast*
Gets them *all*
Keeps them *off*

Dolge SS WEED-KILLER is deadly to any weed it hits. After one thorough application of this potent soil-sterilant, unwanted plant life can't even get started through the growing season. . . . Safeguards parking lots, terraces, drives, walks, gutters, sand traps, courts, tracks and other areas against ruinous growth. . . . Reduces fire hazard by eliminating flammable vegetation close to industrial locations. . . . Finishes such hardy pests as poison ivy, wild honeysuckle, bindweed, crabgrass. . . . Cuts ground maintenance costs drastically. . . . One gallon of SS WEED-KILLER in solution treats 1250 square feet on the average.

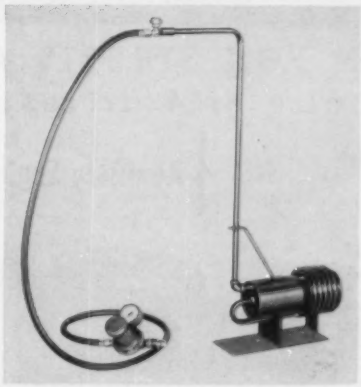
Write for free, up-to-the-minute booklet on weed control. See your Dolge Service Man

Dependable **DOLGE**
WESTPORT, CONNECTICUT

(Continued from page 215)

They operate on liquid withdrawal from the propane cylinder, providing even temperature until the tanks are empty and thus eliminate pressure loss by heavy fuel draws. Maximum flame temperature is reached at 30 pounds pressure (2000°), even in elevated terrain, and can be adjusted downward to reduce BTU input. High pressure hose, available in ½" and ⅜" I.D., must be used, reports the manufacturer.

The several models available include the well-type, bottom and flue type, and hand-type. All burners come equipped with a three port orifice to eliminate clogging and assure complete combustion with no flue etching. Automatic controls provide steady, constant control.



This FL-2 well-type Flamegas burner is shown with high-pressure hose and 67 BTK regular 500,000 BTU for flues up to 7 inches.

Transistorized Two-Way Radio Up to 100 Watts

A small-size 100-watt transistorized two-way radio is available in low band frequencies, 25 to 50 mc. It is the first transistorized unit in this power to be packaged in a case as small as four inches high, 8⅝ inches wide and 15 inches long. The complete unit can be mounted under the dash.

Despite the increase in power, the new equipment draws only 1.75 amperes when "on" and ready to transmit. Standby drain (ready to receive a message) is only 40 milliamperes using a 2-watt speaker. Also available is 30-watt equipment in low band, between 25 to 50 mc. Both models are now part of Transistorized Progress Line, which includes high band equipment (150-174mc.) in 10, 30, and 75 watts.

For further information, write G-E Communications Products Department, P.O. Box 4197, Lynchburg, Va.

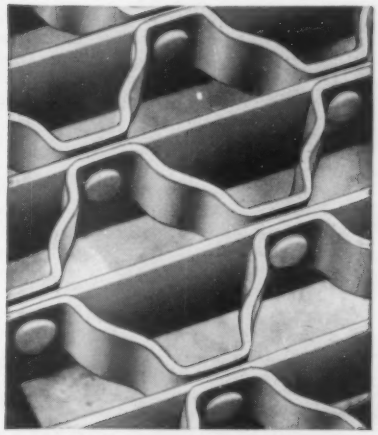
Budget-Priced Dictating-Transcribing Machine

Both dictator and transcriber using the "Envoy" will find its built-in indexing system makes word and phrase finding easy. They also will find controls to be few and simple, with talk-listen functions controlled at the microphone.

Versatility is a keyword for this compact machine. It can be used to dispatch correspondence, reports, memos and other written communications and for recording conferences, interviews and phone conversations. Optional accessories include a desk mike for loud speaker playback; an inverter for powering the recorder from the cigar-

(Continued on page 219)

New "CK" BRIDGE DECKING ENDS WEAVING OF CARS



Modification of the original Irving Type V Decking has eliminated "weaving" on open mesh steel floors. The improvement is effected by a 3/16" elevation difference of the crimped bars over the straight bars.

"CK" Decking, successfully field-tested for 4 years, has the same advantages of safety, strength, durability and self-maintenance as standard Type V Decking

Write for Complete Information on New "CK" DECKING.

★

"A Fitting Grating for Every Purpose"

IRVICO®

IRVING SUBWAY GRATING CO., Inc.

Originators of The Grating Industry Est. 1902

Offices and Plants at:

5030 27th St., Long Island City 1, N. Y.

1830 10th St., Oakland 20, California

BAUGHMAN SAND and CINDER SPREADER

SAFETY CHAMPION FOR STREETS AND HIGHWAYS

choice of 4 drives

PTO with { Mechanical Operation / Hydraulic Operation

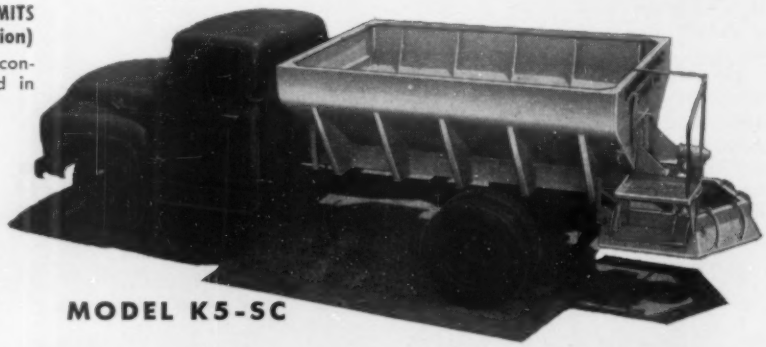
Auxiliary Engine with { Mechanical Operation / Hydraulic Operation

CAB CONTROLLED VACUUM CLUTCH PERMITS SPOT SPREADING (on mechanical operation)

Completely sealed, vacuum operation, controlled from cab. Start or stop spread in motion, as at intersections, safety zones. On hydraulic operation models, spot spreading is controlled by by-pass valve.

TWO-SPEED "QUICK CHANGE" MECHANISM

Simple sprocket and chain drive: low for chemical spreading, high for large-volume spreading. No need for expensive automotive transmission. On hydraulic opetation models, spreading volume is valve controlled.



MODEL K5-SC

WRITE FOR BULLETIN A-442

BAUGHMAN

BAUGHMAN MANUFACTURING COMPANY

307 SHIPMAN ROAD • JERSEYVILLE, ILL.

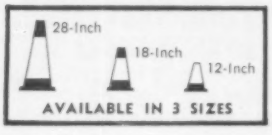
HERE is the answer to EMERGENCY BARRICADES

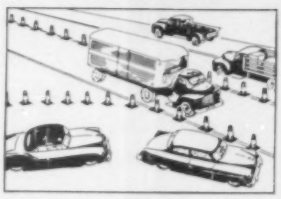
Lightweight, Easily-Adaptable

SAFE-T-CONE TRAFFIC GUIDES

SAFE-T-CONES are proven and accepted by Federal, State and Municipal traffic authorities in hundreds of major cities ...for traffic channeling, utility repairs, line painting and emergency blockades.

SAFE-T-CONES are easily adaptable to all situations at a moment's notice. Special construction allows them to be "stacked" in small space.





Solid-Color PVC* POLY-CONES—18-inch and 28-inch sizes. Outlasts ordinary cones without upkeep!

*Poly-Vinyl Chloride

For full information write

RADIATOR SPECIALTY CO., CHARLOTTE, N. C.

ETNYRE Street Flushers

"THE MACHINE OF A DOZEN USES"

KEEP YOUR STREETS "HEALTHY"

During the hot, dusty months of midsummer an Etnyre Sanitary Street Flusher will keep your streets clean, cool and healthful by reducing bacterial count and disease hazard, laying dust and cooling hot pavements. Streets up to 42 feet wide cleaned in ONE TRIP—even under parked cars. See your Etnyre dealer for full information or write us today!

E. D. ETNYRE & CO., Oregon, Illinois

(Continued from page 217)

ette lighter of a car; a telephone recorder for capturing both sides of a phone conversation.

"Envoy" uses light-weight spools that are easy to carry and inexpensive to mail. It is equipped with a 90-minute tape and has controls for fast forward and fast "back". It weighs less than 9 pounds. For additional information, write VOICEWRITER DIVISION OF MCGRAW-EDISON CO., DEPT. AC-7, WEST ORANGE, N. J.

New Recording Instrument for Water Meters

A new, small master-meter instrument that can be attached to domestic water meters was introduced at the American Water Works Association meeting in Miami Beach by F. S. BRAINARD & COMPANY, HARTFORD 12, CONN.

The master meter is an instrument that can measure and record the times and amounts of flow through any standard water meter. It is particularly useful when a customer complains that he has an excessive water bill and does not believe that he is receiving the water. The instrument records the amount and time of water used throughout the day.

The Brainard organization has produced instruments of this type for many years; however, they were relatively large and would not fit in many locations. They particularly were difficult to install in most water-meter vaults that are growing in popularity today.

The new instrument, #601, will fit into any standard meter box. It has a single-pen, 4-inch round chart, with a 24-hour recording period. It markets for $190.

Instruments that do not fit into meter boxes include the model #571 single-pen, 8-inch round chart with recording periods of 24 hours or 7 days. This markets for $390. The company also produces instruments for compound as well as single meters, recording on one chart, either round or strip. It also supplies instruments that show water temperature and usage, or water pressure and usage.

Announces Mobile Crane

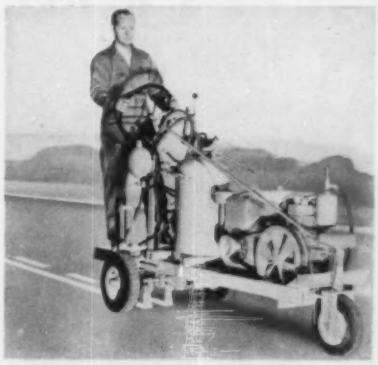
Drott's new Go-Devil mobile crane is designed for materials handling versatility and easy maneuverability. It has 2000-pounds capacity and a deck carry capacity of 4000 pounds, and features an unusual crane mechanism, called the Rotelift, which rotates, telescopes and lifts.

The boom can be turned in a con-

(Continued on page 221)

HOTTEST
STREET PATCHER
IN TOWN
AFTER TOWN

ELLIS "HOT ROLL" Liberty, Mo.



Mark-Rite Model 9000 LINEMASTER automotive type clutch and differential with chain drive deliver maximum power with no slippage and will climb grades up to 20%.

★ MODEL 9000
Self-propelled

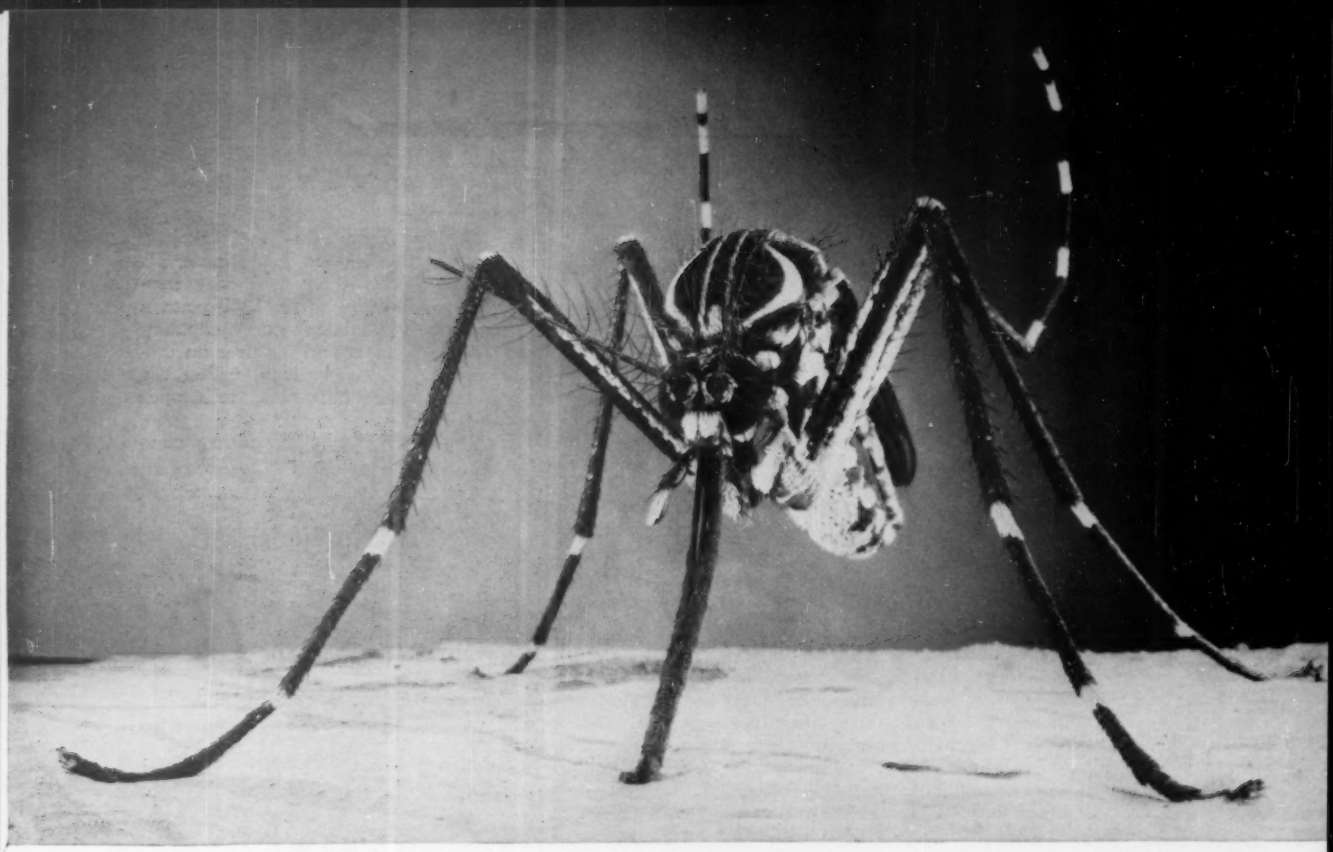
Mark-Rite
LINE MARKER
Pays Its Own Way

Users of the Mark-Rite Model 9,000 one man operated Line Marker report that it lays 25% to 50% more line per day than other machines.

This machine was designed for use in cities, airports, counties and for other heavy duty uses. Precision built throughout. Stripes 1, 2 or 3 lines solid or skip simultaneously. One or two colors. Paint capacity 10 to 60 gals. Automotive precision steering and "Hairline" spray control issues clean straight or curved lines, in widths from 2" to 6". It can turn on a 6 foot radius. Accessories permit many other uses for this versatile machine, such as spray painting, insect and weed control spraying. Write today for literature or demonstration.

FOR COMPLETE SPECIFICATIONS WRITE FOR THIS 16-PAGE CATALOG TODAY . . . Tells how to select the proper Line Marker for your Job.

Unimasco, inc.
UNIVERSAL MANUFACTURING & SALES CO.
424 West Redondo Beach Blvd., Gardena, Calif.
FAculty 1-3322



NOW HE'S REALLY HAD IT!

Economical malathion-Lethane combination gives
30% better kills than presently-used insecticides
... controls resistant strains, too

60% kill of mosquitoes in area control work is no longer good enough. 90% *plus* is what you can expect with a malathion-Lethane combination. The cost? Comparable to presently-used but *far less effective insecticides.*

Controls larvae and adults

Malathion plus Lethane gives spectacular results on both life stages. While recommended rates are generally higher, 1/10 lb. per acre has given excellent control of adult mosquitoes in Florida. Hundreds of thousands of acres are being treated yearly for larvae in California at ½ lb. per acre with similar results.

Controls resistant strains

While malathion is replacing less effective insecticides in all areas, it is particularly useful in the many areas where mosquitoes have become resistant to chlorinated insecticides. Here, authorities have switched almost exclusively to malathion because it is *the* phosphate with low toxicity to warm-blooded animals. The U.S. Public Health Service reports that malathion is actually less toxic than DDT. Vector control authorities, park and city managements are specifying malathion for its combination of mosquito-killing power and safety in use. It can be applied by air, thermal fogging and mist spraying with equally good results.

Write to American Cyanamid Company, maker of technical malathion, for detailed information on area mosquito control.

Formulations widely available

Malathion formulations are supplied to area control authorities by many well-known manufacturers under their own brand names. American Cyanamid Company, Agricultural Division, New York 20, New York.

CYANAMID

MALATHION
INSECTICIDES

(Continued from page 219)

tinuous 360° circle, and is telescoping with power in either direction. It can be raised from 5° below horizontal to 75° above horizontal. A sturdy hydraulically-driven winch provides 46 feet per minute cable speed and is protected against overload.

The Go-Devil's carry deck can be used to transport numerous objects in addition to that which is on the hook itself. Over 25 square feet of space are provided with a full-length 102-inch side carry deck for extra-long objects.

Operator conveniences include full power steering, a combination "stand-and-sit" seat, and an "operator designed" compartment. For additional information, write DROTT MFG. CORP., 3126 S. 27TH ST., MILWAUKEE 15, WIS.

New Equipment Leasing Plan

Municipal sanitation departments use Cushman Trucksters to increase efficiency of street cleaning operations.

CUSHMAN MOTORS, 946 N. 21ST ST., LINCOLN, NEB., a subsidiary of Outboard Marine Corp., announces a new leasing plan for acquiring its gasoline and electric powered Trucksters and Golfsters. The plan is said to be particularly applicable for use by municipalities.

Advantages to the lessee are, according to Cushman officials, (1) lower plant operating costs; (2) continued availability of working capital; (3) maintenance of an open

(Continued on page 223)

Clean Water Meters now in FIVE Minutes —

with VAPOR BLAST Liquid Honing

...no acids, solvents, scrapers, wire brushes

Meters and parts at Milwaukee Water Works before and after Liquid Honing.

Modernize *your* meter cleaning — with Vapor Blast LIQUID HONING! Removes dirt, discoloration, scale, paint from corners, crevices, internal parts, chambers, thoroughly and effectively, with *no possibility* of scratching, scoring, or change in precision tolerances. Completely cleans a meter and all parts in less than FIVE minutes . . . Delivers cleaner, brighter water meters that look like new — to build customer satisfaction and confidence in your water meter department *economical* replacement program.

VB Liquid Honing is proving itself in Milwaukee, Cincinnati, and in towns in New Jersey, Georgia, Florida. Get the whole time-saving, money-saving story on VB LIQUID HONING in meter cleaning — or send a meter for Free laboratory demonstration cleaning.

*Vapor Blast and Liquid Honing are Trademarks

VAPOR V-B BLAST

VAPOR BLAST MFG. CO.
3037 W. Atkinson Ave., Milwaukee 9, Wisconsin

Exciting things happen at the Continental

- Downtown — heart of business, shopping & entertainment
- 350 outside rooms with bath
- LaPetite Lounge
- Fine Convention Facilities
- Garage Next Door

100% AIR-CONDITIONED

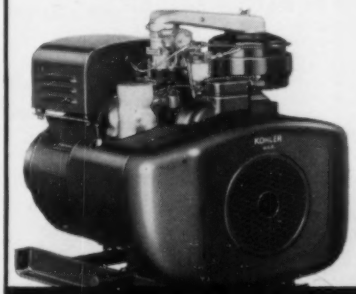
... and you'll enjoy

Le Chateau C
DINING ROOM - COCKTAIL LOUNGE
We pride ourselves on serving the finest charcoal steaks in the city.
SWIM in our Modern Indoor Pool
HOTEL
Continental

NOEL DANIELL, Manager
Phone: HA 1-6040
Baltimore at Eleventh St.,
KANSAS CITY, MO.

Reliable emergency power for new OCDM requirements . . .

KOHLER ELECTRIC PLANTS



Kohler electric plants enable you to meet — reliably, economically — the OCDM directive requiring installation of automatic emergency generators before radio equipment for civil defense can be bought with matching Federal funds.

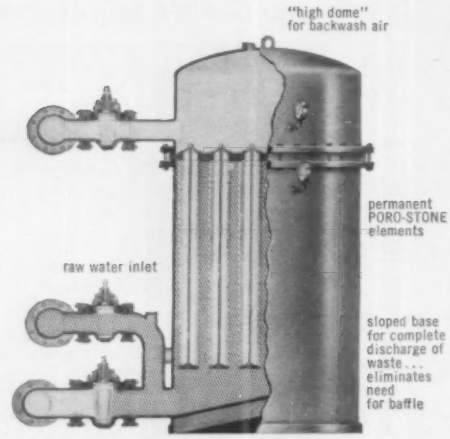
Kohler stand-by plants with automatic transfer switch are fully packaged for immediate, unattended take-over of emergency loads. Sizes to 100 KW, gasoline and diesel. Write for folder H-44

KOHLER CO. *Established 1873* KOHLER, WIS.

MODEL 5RM21, *5 KW, 115 volt AC. Air-cooled, gasoline. Remote start.*

KOHLER OF KOHLER

Enameled Iron and Vitreous China Plumbing Fixtures • Brass Fittings
Electric Plants • Air-cooled Engines • Precision Controls



"HIGH-POLISH" FILTRATION

For Standby or Emergency— Adams Diatomite Filters

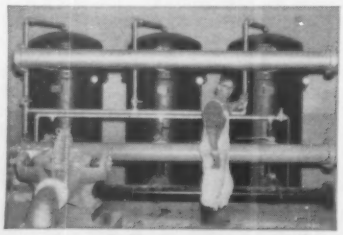
Adams IWF Diatomite Filters are delivering "high-polish" water with major economies and complete freedom from troubles, in an increasing number of municipal systems. Some installations are for standby duty during lengthy periods when sand filter beds are being cleaned. Others provide additional capacity for peak loads during seasons when an auxiliary source of high turbidity must be tapped.

Still other systems utilize Adams Filters on the effluent line of their sand filters. The latter remove the coarser particles, while the Adams Filters remove the bacteria, nematodes and other microscopic particles which sand cannot trap.

Many smaller community systems utilize Adams "high-polish" filtration exclusively, obtaining a clarity of water that delights consumers.

Other advantages you will enjoy in Adams Filters are:

1. **Compact size, requiring only a fraction of the installed space of sand filters.**
2. **May be installed at half the price of sand filters.**
3. **Simplicity of piping and installation.**
4. **Rugged, permanent Poro-Stone filter elements.**
5. **Long filtration cycles through continuous filter aid feed.**
6. **Backwashing that really cleans the filter by the Adams efficient "Pressure Dome" system.**
   Send us your problems today.



This Adams plant at Peru, N. Y., installed for emergency service, proved so satisfactory that it is now used continuously, year-round.

R. P. ADAMS CO., INC.

232 EAST PARK DRIVE • BUFFALO 17, NEW YORK

DRILL HOLES UP TO 1½" DIA. IN MASONRY—SAVE UP TO 70% WITH NEWEST LOW-COST TRUCO® HAND KIT AND FAMOUS TRUCO DIAMOND BITS

Handy little kit weighs only 17½ lbs. and easily saves its cost on your first job. Drills concrete (but not rods), brick, marble, terrazzo, all tiles like crazy; wonderful for anchor holes. Every maintenance crew needs one. Accessories available.

Write for Distributor's name and literature

TRUCO MASONRY DRILLING DIVISION
WHEEL TRUEING TOOL COMPANY
154-3200 W. Davison, Detroit 38, Mich.
575 Langlois, Windsor, Ont.

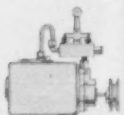
HALF-A-CENTURY OF INDUSTRIAL DIAMONDS

Write for New Catalog

"Snow removal jobs go three times faster with MONARCH POWER HYDRAULIC CONTROLS"

DYNA-MIGHT
Battery-Operated

HY-LO-JACK



HY-LO FOR JEEP
Fan-Belt Driven

says
E. H. UECKER
Madison Square Garage, Grand Rapids, Mich.

Mr. Uecker has found what everyone finds — that Monarch Power Hydraulic Controls make snow removal jobs easier, faster, and more economical! One man controls the plow from the cab . . . instant up-and-down action with the flick of a wrist. Battery-operated or fan-belt driven units. See your dealer. Free folder upon request.

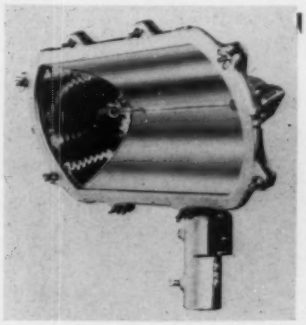
MONARCH ROAD MACHINERY COMPANY
1331 Michigan St., N.E. Grand Rapids 3, Michigan

(Continued from page 221)
credit line; (4) the tax advantage of paying for the vehicles entirely out of income before taxes; (5) the ability to have and use the units immediately. At the end of the primary lease term, the lessee may continue to lease the Cushman equipment for as long as he wants at a yearly cost of just slightly more than his previous monthly payments.

More Floodlight Life and Efficiency

A new floodlight with vertical beam spread of 9° and a horizontal beam spread of 100°, opens up floodlighting possibilities beyond those of the round or oval light pattern. This Wide-Lite Lumitor uses quartz-iodine lamps, which do not grow dim during their lifetime.

The quartz-iodine lamp life rates 2,000 hours compared with 1,000 hours for an ordinary incandescent, with mean efficiency of 22 lumens per watt throughout life, against 14.5 lumens per watt for the ordinary incandescent. These gains are obtained because the traces of iodine gas in the lamp catch the particles of tungsten that evaporate from the hot filament, and return them to the filament. Thus, the bulb wall doesn't darken.



Applications for the Wide-Lite Lumitor include lighting for stadiums, golf driving ranges, and airport runways. It is available in 500 and 1500-watt models. Further information may be obtained from WIDE-LITE CORP., BOX 191, HOUSTON, TEXAS.

New Refuse Truck Body by Heil

Those attending the forthcoming Annual Convention of the American Public Works Association in New York City, August 14-17, will be introduced to a new type of garbage and rubbish collection body, which, according to Joseph F. Heil, president of THE HEIL CO., MILWAUKEE 1, WIS., will outmode al existing specifications for this type of city equipment.

The new refuse packer is called the Colectomatic MARK II. It is loaded through an unusually low and large opening in the rear. Push-button controls operate the hydraulic mechanism which compresses the refuse into the body, allowing greater loads to be collected and hauled.

In addition, the Mark II can be equipped to empty refuse containers and automatically compress the refuse into the truck body. Other benefits of its new design result from a radical re-location of the center of gravity during loading

(Continued on page 225)

A PLECTRON

PATROL
High Frequency F. M. Radio Receiver
will
KEEP YOU IN TOUCH WITH YOUR RADIO EQUIPPED VEHICLES
AND
INCREASE THE EFFICIENCY OF YOUR DEPARTMENT

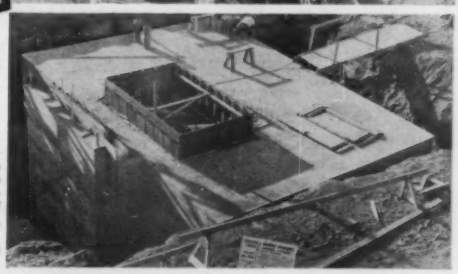
Receivers are available on a single, fixed frequency in the 25-54 or 152-174 mc range.

CRYSTAL CONTROLLED—NOT TUNABLE
NO INSTALLATION REQUIRED
LONG RANGE RECEPTION
ATTRACTIVE METAL CASE
LOW COST

For complete information please write Dept. ACM-4

PLECTRON CORP.
Overton, NeBraska

How to square a circle with Gates



Project:
$60 million Los Angeles International Airport expansion program.

Both the underground Central Utilities Vault and the circular foundation of the new Terminal Building were formed with Gates Vertical Rod System using the same form panels! (Without additional modifications, backing or templates.)

1. Vault roof and 16-foot walls poured monolithically.
2. Forms stripped and panels moved to Terminal Building site.
3. Circular foundation, 16 feet high, diameter of approximately 130 feet, formed to precise curvature using the same ¾" Gates thinpanels.
4. Outside forms "floated" with inside bracing only. Gates PlastiCone* breakback form ties provided 1-inch breakback specified.

Gates built-in versatility is designed to square circles...cut costs...help you bid a job closer without risking pocketbook or reputation! Get the whole story on Gates Concrete Forming Systems and techniques.

*TRADEMARK

There's a Gates System for Every Forming Need

Gates & Sons, Inc.

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80 South Galapago Street—Denver 23, Colorado

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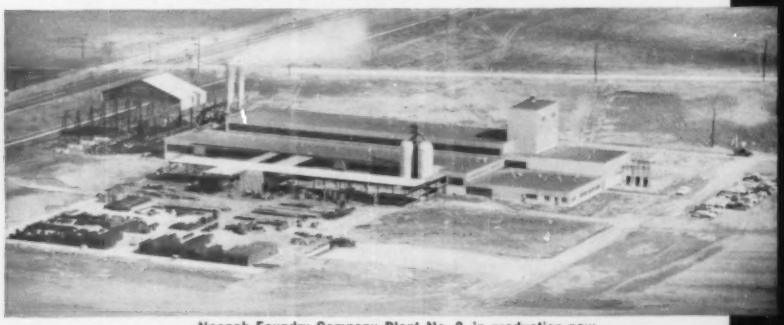
Representatives in principal North American cities

Consult our catalog in Sweet's 1960 Architectural & Light Construction Files ...or write for complete information.

Neenah Foundry Company Home Office and Plant No. 1



Neenah Foundry Company Plant No. 2, in production now

Neenah Announces...

. . . . the full-time operation of plant No. 2 — formally opened May 1. The production from this 150,000 square feet facility increases our daily maximum capacity to 500 tons of Gray Iron and Ductile Iron **CONSTRUCTION CASTINGS.**

Informative and fully illustrated 168-page catalog will be sent promptly upon request.

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NEENAH FOUNDRY COMPANY • NEENAH • WISCONSIN

Chicago Office: 5445 North Neva Avenue, Chicago 31, Illinois

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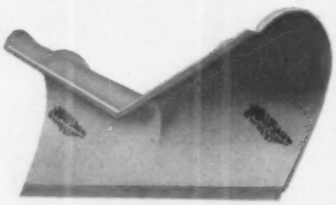
WAUSAU PRODUCTS

The WORLD'S MOST COMPLETE LINE of SNOW REMOVAL EQUIPMENT!

Now Introducing the REVOLUTIONARY

NEW EXPRESSWAY

- Wausau Snow Plows - Vee and Blade
- Wausau Snow Wings
- Wausau Underbody Truck-grader Ice Blade
- Wausau Sno-Thro Loader and Thrower
- Wausau Material Spreaders
- Write for full details on all Wausau Products . . . Literature available on every item.

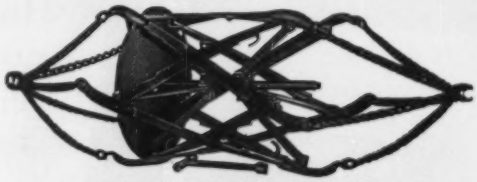


The WAUSAU EXPRESSWAY snow plow is a high speed power reversible blade plow designed for today's modern expressways, toll road and airports. It is the most modern and radical design change in the snow plow industry.

WAUSAU IRON WORKS WAUSAU, WISCONSIN

Pioneer Snow Plow Builders

EXPANDING ROOT CUTTER SEWER CLEANER



Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit sewer from 8 to 36 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Open and in action removing roots and cake sediment like this.

Write for our new catalog on complete sewer cleaning equipment.

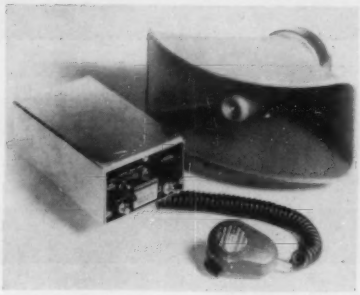
EXPANDING SEWER MACHINE COMPANY

108 East Walnut St. **Nappanee, Ind.**

(Continued from page 223)

cycles, to eliminate tendencies of front wheels to raise off ground, or for truck to tip sideways when on uneven or soft ground at disposal areas.

Multiple Warning Siren



A combination electronic siren, public address system and radio call amplifier consists of a control panel with attached microphone for dash mounting, and a speaker unit for installation atop the vehicle.

The unit's exclusive warble pitch for storm warnings and a distinctive tone for air-raid signals are said to eliminate confusion and make each vehicle thus equipped, an auxiliary mobile warning unit.

For further details about the "Dominator," write DAZL-LITE PRODUCTS CO., KANSAS CITY, MO.

Utility Service Truck Body

The 1960 model Service-Master Body is now in production, reports McCabe-Powers Body Co. Changes in exterior lines and compartments incorporate suggestions from users throughout the country.

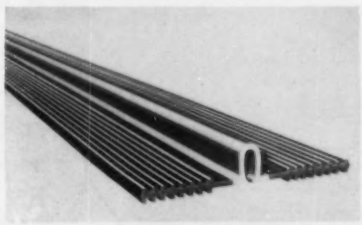
The body is available in sizes for old and new ½-, ¾-, 1- and 1½-ton chassis, regardless of make. The Model SM-10 is 77 inches long at the floor line and fits chassis having 40-inch to 42-inch cab-to-axle dimension; Model SM-15 is 90 inches long and fits 48-inch to 54-inch CA chassis. Models SM-20 (single rear wheels) and Model SM-30 (dual rear wheels) bodies are 102 inches long and fit chassis having 57-inch to 60-inch CA.

Optionals include an aerial ladder, available in two models and in 26-inch and 30-foot lengths. Model ML ladder is elevated by manual hydraulic pump and Model LH ladder by a motor-driven pump powered by the truck battery. Both rotate 360° and extend to desired length manually.

A 6-page folder describing the entire line of Service-Master Bodies and optionals can be obtained from MCCABE-POWERS BODY CO., 5900 N. BROADWAY, ST. LOUIS 15, MO.

Announces New Waterstop

These waterstops are extruded simultaneously from two PVC compounds: that utilized in the center area is compounded to combine strength with maximum flexibility; that in the multiple rib area, for



great strength with desirable rigidity.

The manufacturer reports that these Sealtight Duo-PVC waterstops are the first designed to handle expansion of concrete joints correctly, without stretching the material or stressing the multiple-rib area. This is accomplished through use of a U-Bulb center area design that will mechanically expand up to 1½ inches. The opening of the U-Bulb is protected by a thin membrane, which prevents infiltration of concrete during pouring. The membrane is designed to tear under expansion and allow the U-Bulb to accommodate expansion heretofore thought impossible, states the manufacturer.

During tests conducted at the

(Continued on page 227)

Re-new your structures with GUNITE!

★ durability
★ economy
★ flexibility

- DAMS
- RESERVOIRS
- TUNNELS
- GRAIN ELEVATORS
- BREAKWATERS
- CONCRETE TANKS
- FILTER PLANTS
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- BRIDGES

estimates, specifications and surveys made free of cost to you. write, wire or call MElrose 4-8120

INDIANA GUNITE & CONSTRUCTION CO., INC.

ENGINEERING—CONSTRUCTION

Contracts Taken Anywhere

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Gentlemen: Please have a representative contact me. I am interested in:
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NETCO CATCH BASIN CLEANER

Is Serving Many States, Cities and Turnpikes Throughout This Broad Land

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- East Cleveland, Ohio
- Cumberland, Maryland
- Indianapolis, Ind.
- Lansing, Michigan
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- Boston, Mass.
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Easily mounted on any short wheel base truck with 8 ft. in back of the cab, the NETCO with orange peel or clamshell bucket can be operated continuously, averaging 20 to 30 catch basins a day. Hoisting capacity up to 1500 lbs.

NETCO does almost three times as many basins a day at less than half the cost per basin compared with old-fashioned manual methods.

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CLARK-WILCOX COMPANY
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415 Congress Street, Portland, Maine
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Anthrafilt stands alone as the one Filtering Medium that is best for all types of filters.

Years of efficient and economical use in every type of filter plant has made ANTHRAFILT the standard of excellence in the filtering medium field.

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DOUBLES length of Filter runs • REQUIRES only half as much wash water. • KEEPS Filters in service over longer periods. • INCREASES Filter output with better quality effluent. • GIVES better support to synthetic resins. • PROVIDES better removal of fibrous materials, bacteria, micro-organic matter, taste, odor, etc. • IDEAL for industrial acid and alkaline solutions. • EFFECTIVE filtration from entire bed. • LESS coating, caking or balling with mud, lime, iron, or manganese.

IDEAL FOR USE IN EVERY TYPE OF FILTER

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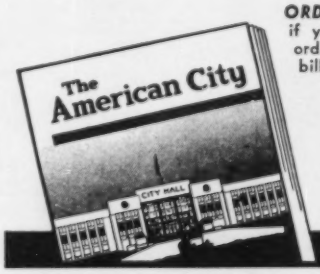
ORDER TODAY at $2.75 per copy if your payment comes with your order. Otherwise $3.00 if you wish bill.



The American City
470 PARK AVE. SOUTH
NEW YORK 16, N. Y.

a ***Buttenheim*** publication

(Continued from page 225)

University of Detroit, a joint was opened to 1½ inches and the Duo-VC waterstop was subjected to a 100-foot head of water, then a 215-foot head: no leakage occurred.

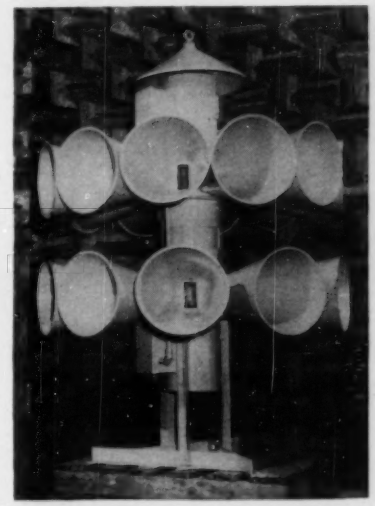
Complete information on this new type of waterstop engineering can be obtained from W. R. MEADOWS, INC., 26 KIMBALL ST., ELGIN, ILL.

First Combination Fire-CD Sirens Approved for Government Funds

The first community sirens approved by the federal government for matching funds produce three distinct signals, one usable as a fire call and the other two the officially specified air raid warnings. The Office of Civil Defense and Mobilization has certified these three-way signals as components of the Civil Defense Warning System.

With the government contributing 45% of the purchase price on one model and 40% on another, net cost to communities actually will be lower than for a single tone siren; for fire warning only—$690 compared with $800. The government also will contribute 40%

(Continued on page 228)



An approved three-tone community siren for fire and air raid warnings.

HERE'S A TUBELESS WITH A BONUS!

MODEL 5940

POSITIVE ISOLATION OF TERMINALS SOLVES "FLASHOVER" PROBLEM!

CONFORMS EEI-NEMA STANDARDS

Send for Free Literature!

SunSwitch DIVISION

RIPLEY COMPANY, INC., MIDDLETOWN, CONN.

WELCOME

American Public Works Assn. & Equipment Conventioneers

to your meeting at the Coliseum August 14-17, 1960

Henry Hudson Hotel

Headquarter at the

In the heart of New York City—58 steps from Coliseum. Near all activities & transportation terminals. Swimming Pool available to guests. Entertainment Nightly in Voyager Room. Superb Meeting Facilities... to 1000. Garage and Parking.

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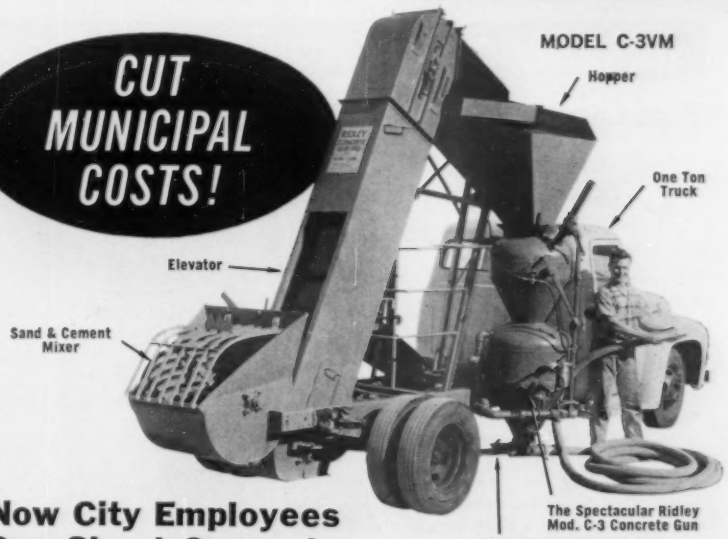
NEW YORK CITY

CUT MUNICIPAL COSTS!



Now City Employees Can Shoot Concrete

Municipal crews can now make quick, easy repairs to damaged concrete structures and at the same time have the capability of supplying full concrete gunning capacity for construction work of all kinds.

NEW RIDLEY RIGS CUT COSTS 3 WAYS

1. COST OF EQUIPMENT—Despite their efficiency, Ridley Rigs are priced substantially below others.
2. COST OF MAINTENANCE—Maintenance costs are virtually non-existent.
3. COST OF OPERATION—In every class, the Ridley Rig will shoot 50% more material with ⅓ less air than the next best rig. 25% reduction in crew means further savings.

Available in any type of truck chassis or trailer.

Write for technical data and model list.

Ridley and Company, Inc. 2217 Pontius Avenue Los Angeles 64, California

CONCRETE TESTERS

THE WORLD'S FINEST LOW COST PLANT AND JOB-SITE TESTERS For

CYLINDERS
CUBES
BLOCKS
BEAMS
PIPE

IF IT'S A CONCRETE TESTER YOU NEED-GET IN TOUCH WITH

FORNEY'S, Inc.
TESTER DIVISION
P. O. BOX 310 · NEW CASTLE, PA.

Purchasing News

(Continued from page 227)

of the installation cost, reports the FEDERAL SIGN AND SIGNAL CORP., BLUE ISLAND, ILL., which will provide communities with full information.

Launches Development Program

M. Gilwood C. Calmon

The Permutit Company, a division of Pfaudler Permutit, Inc., and one of the oldest and largest producers of equipment and chemicals in the water treatment field, announces that Robert Van Iderstine, assistant general manager, has inaugurated a new research and development program, aimed at developing appropriate new chemicals, processes and equipment. Emphasis will be in the water treatment field.

To implement the program, M. E. Gilwood has been appointed director of development. Dr. C. Calmon, director of laboratories at Permutit's Birmingham, N. J. chemical plant has been named director of research, the post formerly held by Mr. Gilwood. He will continue to supervise the chemical laboratories.

Purchasing News Briefs

• from **Mixermobile Manufacturers,** Portland, Ore., comes word that Gus H. Wagner has purchased the interests of his brothers and is now sole owner of the company that introduced mobile concrete mixing equipment and the Scoopmobile line of self-propelled loaders used in heavy construction throughout the world. Gus Wagner continues as president, with his sons Stan and Vern, respectively, general manager, and vice president and plant manager.

GOLDAK TRANSISTORIZED LOCATORS

Pipe Locator-Leak Detector
"Dualtronic"
Model LC-5T

The new "Dualtronic" combines the finest transistorized Pipe Locator ever developed with a high-gain Leak Detector to produce an effective and useful multi-purpose instrument. Designed specifically for Municipalities and Water Companies, the LC-5T assures pin-point detection of pipes, cables, mains and laterals and becomes a sensitive detector for water leaks simply by plugging in a crystal, rubber-encased microphone. Additionally, by a simple manipulation the new "Dualtronic" will pin-point valves, risers, boxes, and manhole covers. Now with transistors the versatile LC-5T is lighter, more sensitive, easier to operate, and it requires only flashlight batteries . . . Write today for further details on the "Dualtronic" and other Utility detection instruments.

The GOLDAK Company, Inc.
Leading Electronic Manufacturers
Since 1933
1544 W. Glenoaks Blvd.
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WORLD'S FINEST DETECTION EQUIPMENT MANUFACTURERS SINCE 1933

center of importance in DETROIT

• 800 fine rooms with bath, radio, TV
• Grenadier Dining Room and Lounge
• Coffee Shop
• Convention Facilities
• Ample Parking

Lanson M. Boyer, Gen. Mgr.

DETROIT LELAND HOTEL
CASS AVE. AT BAGLEY
DOWNTOWN DETROIT 26, MICHIGAN

Purchasing

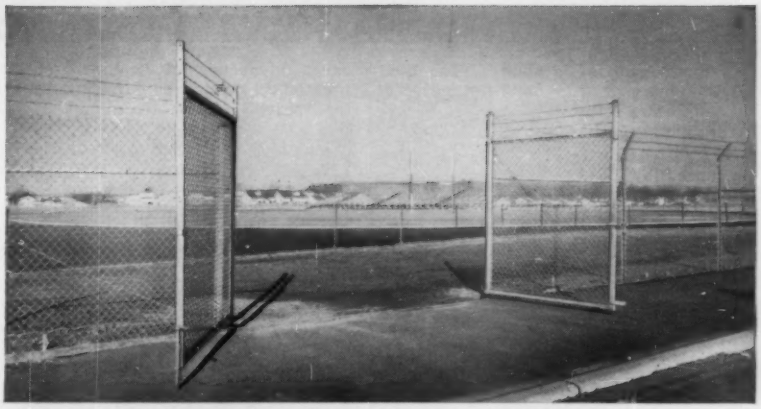
• establishment of a new parts depot at South Eighth and Wright Avenue, Richmond, Calif., is announced by the Construction Equipment Division of **Clark Equipment Co.** The depot is designed to speed delivery of parts of infrequent usage to "Michigan" owners west of the Rocky Mountains.

• presentation of the first 50-year certificate of guarantee for Permaline building sewers was made to the Beezley Construction Co., Dallas, Texas, by Max Swetman, plant manager of **Line Material Industries'** Sherman, Texas, fibre products plant.

• list prices of 58 types of street lighting and traffic signal lamps have been reduced an average of 8.5% by the **General Electric Co.**, according to Robert V. Corning, acting manager of the Large Lamp Department at Nela Park, Cleveland 12, Ohio.

• an additional 425 new **Dodge** police pursuit cars have been ordered by the California Highway Patrol, bringing the total 1960 orders to 721. The pursuit fleet currently numbers 1,004 of which 951 are Dodges. Twenty-four states now are using 1960 Dodge pursuit cars, and specially built Dodge police-type vehicles are also in use in 235 cities and 63 counties.

Officials of the Office of Saline Water, Department of Interior, and CHICAGO BRIDGE & IRON CO., Chicago 4, Ill., inspect a scale model of a 1-million gallon per day sea water conversion plant to be built by CB&I at Freeport, Texas. Left to right are: J. L. Miller, CB&I; Allan Cywyn, OSW; S. L. Luce, CB&I, and Dr. L. Miller, OSW director. The process to be utilized in the plant—long-tube vertical multiple effect distillation—incorporates several newly developed technical innovations. The plant is expected to produce fresh water from the sea for less than $1 per thousand gallons.



"... withstands abuse and spectator 'enthusiasm'..."

Union High School Memorial Field, Union, New Jersey

"Our Anchor Fence has eliminated many of our athletic program headaches. Naturally, with a strong fence and gates, we can prevent 'gate crashing' and keep equipment from being taken off the field. We can protect the turf and cinder track between games—cutting maintenance time. But more important, our Anchor Fence keeps youngsters from playing in the stands, eliminating chances of injury. And during game time, the fence withstands abuse and spectator 'enthusiasm' beautifully."

Plants in: Baltimore, Md.; Houston, Texas; Whittier, Cal.

Call your local Anchor office today for a talk with one of Anchor's trained sales engineers. Write for free catalogue to: ANCHOR FENCE, 6565 Eastern Ave., Balto. 24, Md.

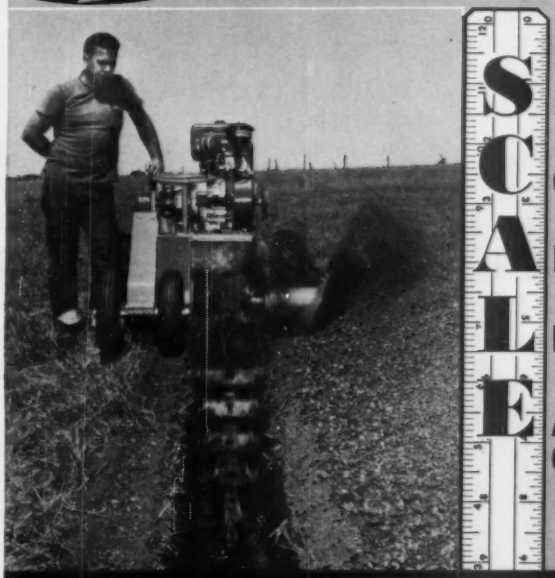
ANCHOR FENCE
Division of ANCHOR POST PRODUCTS, INC.

• Sold direct from factory branches in principal cities.

DITCH WITCH TRENCHER

The measure of Success

CALL COLLECT



SCALE

COMPARE

SIZE: DIGS FROM 4" TO 16" WIDE AND UP TO 6' DEEP

COSTS: AS LITTLE AS 2c PER FOOT!

ABILITY: JOB PROVEN!

LIFE: AS HIGH AS ½ MILLION FEET!

EASE OF OPERATION:

See a demonstration!

CALL COLLECT!

CHARLES MACHINE WORKS, INC.

603 BIRCH ST. • CALL COLLECT, FE 6-4404 • PERRY, OKLA.

ABOUT PEOPLE

Appointment of William E. Ranck as sales manager, Load-Packer refuse collection bodies has been announced by D. J. Davis, director of sales, **Gar Wood Industries, Inc.**, Wayne, Mich. The Load-Packer is a product of the Gar Wood line of truck equipment which includes dump bodies and hoists, Frat-Gates, end dump and hopper trailers, and winches.

W. E. Ranck

Athey Products Corp., Chicago 38, Ill., announces the appointment of John A. Ferguson to the position of sales manager and Claude E. Mathews to the newly-created position of vice president—foreign operations.

George Strawbridge has been elected executive vice president of **Aero Service Corp.**, Philadelphia 20, Pa., a world-wide aerial and mapping and exploration company that is also engaged in the production of raised relief maps. Mr. Strawbridge joined Aero Service's management in September 1959.

G. Strawbridge

Robert B. Bradley has been elected vice-president and executive head of the Construction Equipment Division of **International Harvester Co.**, Chicago 1, Ill., according to an announcement from President Frank W. Jenks. He succeeds Harold T. Reishus, retired.

R. B. Bradley

Chicago Bridge & Iron Co., Chicago 4, Ill., reports the retirement of Donald A. Leach, a vice president and regional sales manager, after 40 years of service. He will remain a director of the company. Succeeding him as manager of the company's central sales region and Chicago district sales office is George S. Trees, also a director. And filling the vacancy of manager of the Pittsburgh district office, created by Mr. Trees' move to Chicago, is J. W. Hoerner.

G. S. Trees

Chicago Aerial Survey, a division of Chicago Aerial Industries, Inc., Melrose Park, Ill., announces the appointment of Richard S. Kraus as manager of its new Wisconsin area office, located at 5232 N. 4th St., Milwaukee, Wis.

R. Y. Kopf

R. E. Kramer

R. Y. Kopf and R. E. Kramer have been elected to the 10-man board of directors of **Pittsburgh-Des Moines Steel Co.**, Pittsburgh 25, Pa. Both men have been serving PDM as vice presidents since the merger with Hammond Iron Works in December of 1959. Mr. Kopf is a member of the executive committee along with President W. R. Jackson and Chairman of the Board J. E. Jackson.

A. F. Woods

S. R. Schleicher

Executive appointments announced recently by the **Marlow Pumps,** Division of Bell & Gossett Co., Midland Park, N. J., are those of Arthur F. Woods, general sales manager, as vice president and general sales manager, and Scott R. Schleicher, general manager, as vice president and general manager. Marlow Pumps is a leading manufacturer of straight, centrifugal, self-priming centrifugal, diaphragm, and plunger pumps.

Clarence W. Clarkson, newly-appointed lighting glassware sales representative for the Eastern Sales district of **Corning Glass Works,** Corning, N. Y., will headquarter at the company's New York City office, 717 Fifth Avenue.

C. J. Moore, former general sales and marketing manager of Exide Industrial Division, **The Electric Storage Battery Co.**, Philadelphia 20, Pa., has been promoted to vice president-marketing of the division.

According to C. A. Reeves, vice president of sales for the **Ripley Company,** Middletown, Conn., Ralph D. Evans has been appointed midwestern sales manager of the company's SunSwitch Division, which manufactures the SunSwitch photoelectric street lighting control and related street lighting control products.

R. D. Evans

Dan D. Baldwin has been named vice president in charge of sales and marketing for **Ster-O-Matic, Inc.**, 400 W. Madison St., Chicago, Ill. manufacturers and suppliers of water treatment and purifying equipment. Mr. Baldwin was formerly sales manager of the Water Filter Division of Sparkler Mfg. Co.

D. D. Baldwin

Keuffel & Esser Co., Hoboken, N. J., manufacturer of materials and equipment for surveying, drafting and reproduction, has announced the appointment of J. Russell Juten, William Keller and Eugene Koenig as vice presidents.

According to word from Gil M. Wayne, executive vice president of **Wayne Mfg. Co.,** Pomona, Calif., manufacturer of power sweepers, William S. Lake has been promoted to the position of general sales manager. In his new position, he will assume responsibility for all matters pertaining to the securing and handling of the company's domestic sales and directly supervise all members of the sales department as well as the activities of all branch offices.

W. S. Lake

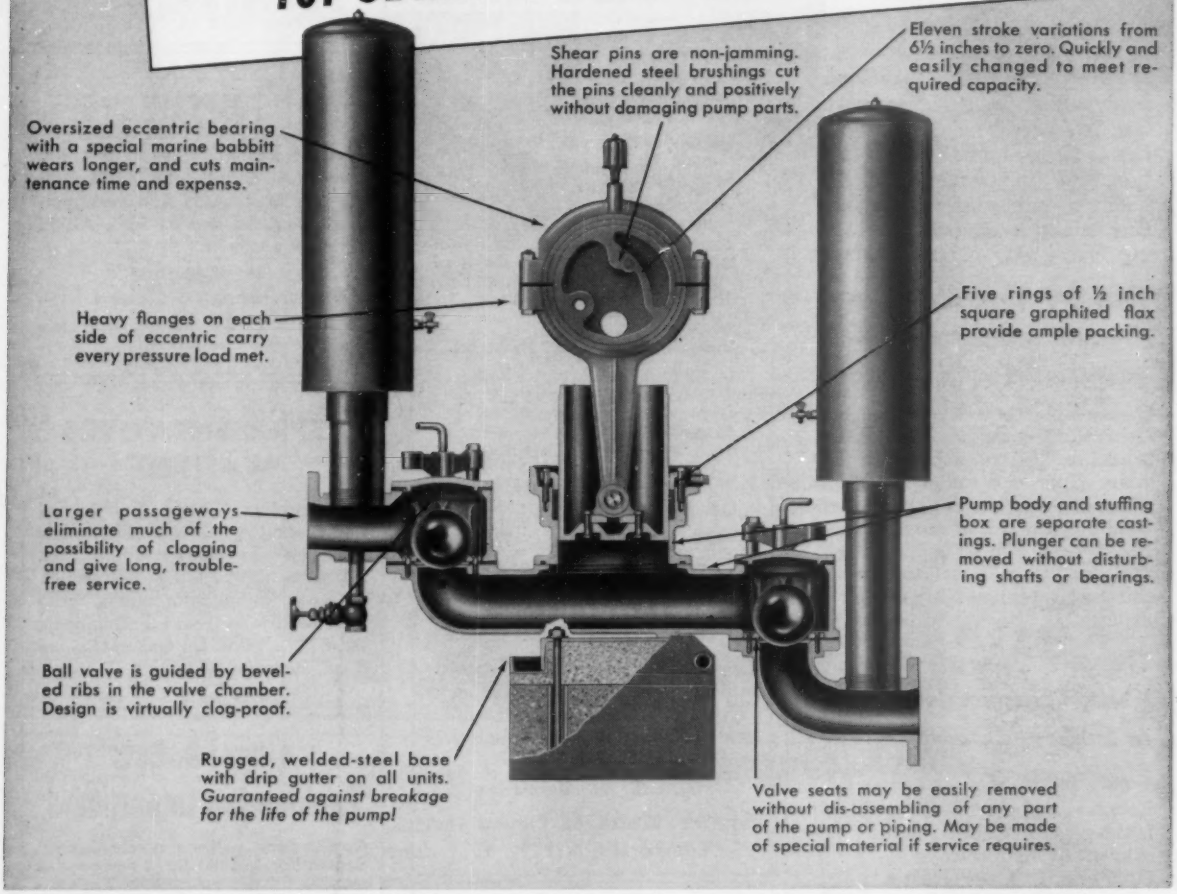
Promotions of Harlan T. Thompson to the post of northeast regional manager, with headquarters in New York City, and Robert D. Christensen as new northwest regional manager has been announced by Norman D. Jesse, vice president and general sales manager of **Byron Jackson Pumps, Inc.,** Los Angeles 54, Calif.

Charles H. Scott has been named chief

(Continued on page 232)

Marlow Sludge Pumps

for SEWAGE TREATMENT PLANTS


Shear pins are non-jamming. Hardened steel brushings cut the pins cleanly and positively without damaging pump parts.
Eleven stroke variations from 6½ inches to zero. Quickly and easily changed to meet required capacity.
Oversized eccentric bearing with a special marine babbitt wears longer, and cuts maintenance time and expense.
Heavy flanges on each side of eccentric carry every pressure load met.
Five rings of ½ inch square graphited flax provide ample packing.
Larger passageways eliminate much of the possibility of clogging and give long, trouble-free service.
Pump body and stuffing box are separate castings. Plunger can be removed without disturbing shafts or bearings.
Ball valve is guided by beveled ribs in the valve chamber. Design is virtually clog-proof.
Rugged, welded-steel base with drip gutter on all units. *Guaranteed against breakage for the life of the pump!*
Valve seats may be easily removed without dis-assembling of any part of the pump or piping. May be made of special material if service requires.

Marlow makes a complete line of plunger sludge pumps. They are available in Simplex, Duplex, Triplex, and Quadruplex designs with 7-, 9-, or 11-inch plunger diameters. Capacities range up to 500 gallons per minute with pressures up to 125 pounds per square inch. These pumps can be used for a wide range of application including handling raw and digested sewage sludges, industrial and chemical waste and slurries, lime putty and slurries, pulp and paper stock, settled oil solids, oil refinery sludges, distillation mashes, sugar bagasse, gum and chicle slurries, meat packing wastes, fish packing wastes, cannery wastes, tannery fleshings, etc.

Marlow PUMPS®

MARLOW PUMPS® DIVISION OF BELL & GOSSETT CO.

MIDLAND PARK, NEW JERSEY

Morton Grove, Illinois — Longview, Texas

9-365

Nature's First Gas Detection Device!

And still a useful indicator of Gas leakage. The characteristics of leaves and other vegetation give the trained observer much valuable information — But infallible accuracy in finding Gas leaks *demands* more.

Heath V Type Leakage Control Surveys take the guess-work out of nature

Today's Heath V Type Leakage Control Surveys for residential areas are the result of over 25 years experience under all types of conditions. The Heath System combines the use of modern testing devices, complete inspection and analysis of vegetation and soil conditions by highly skilled experts.

Heath V Type Leakage Control Surveys result in Safety - Savings - Efficiency

Location and classification of leakage will benefit your system in many ways — Greater safety — Greater efficiency of your maintenance and repair program and Savings that result from the reduction of "unaccounted for."

For complete information on how a HEATH V TYPE LEAKAGE CONTROL SURVEY can benefit your Company, contact us at —

"Safety Service That Saves Gas"

HEATH
Survey Consultants, Inc.
CEdar 5-6660
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About People

(Continued from page 230)

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Ervin L. Dahlund has been appointed general manager of the Diesel Compressor, Locomotive Section of **Fairbanks, Morse & Co.,** according to an announcement made by H. E. Hanson, vice president and general manager of the company's Beloit Division.

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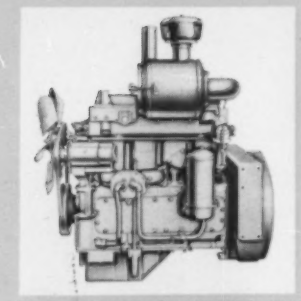
NOW choose from two No. 112 Motor Graders to get the best for your job

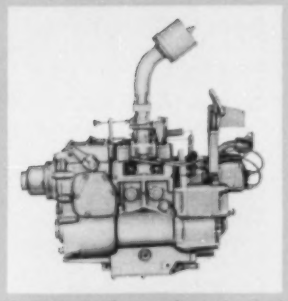
THE 85 HP NO. 112E Increased power, plus other quality features, keep the No. 112E out front in the 21,000 lb. class.

THE 100 HP NO. 112F The new, turbocharged No. 112F will earn its keep with high production and low operating costs.

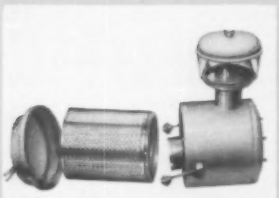
No other motor graders in the 85 HP to 100 HP range have all these features



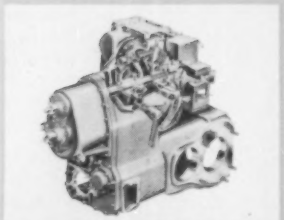
New compact engine: 85 HP in the No. 112E. Turbocharged 100 HP in the No. 112F.
Result: better lugging ability, long life, easier servicing.



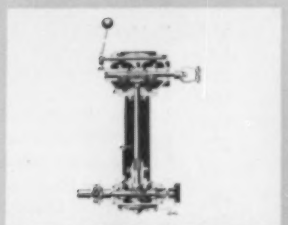
Vertical starting engine: standard on both models.
Result: easy, all-weather starting.



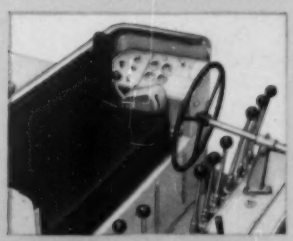
Dry-type air cleaner: standard on both models.
Result: removes 99.8 per cent of air-borne dirt from engine intake every service hour. Takes only five minutes to service.



Oil Clutch: standard on both models.
Result: up to 2000 hours of operation without adjustment.



Improved blade controls: standard on both models.
Result: precise adjustment, easy engagement—anti-creep lock makes blade stay put under load.



In-seat starting: standard on both models.
Result: finger-tip convenience and positive starts.

More and more municipalities, counties and townships are finding that the production and economy of Caterpillar Motor Graders save taxpayers' money. You can see the proof of this by asking your Caterpillar Dealer for a demonstration on your job. He backs up every machine he sells with reliable parts and dependable service to protect your investment.

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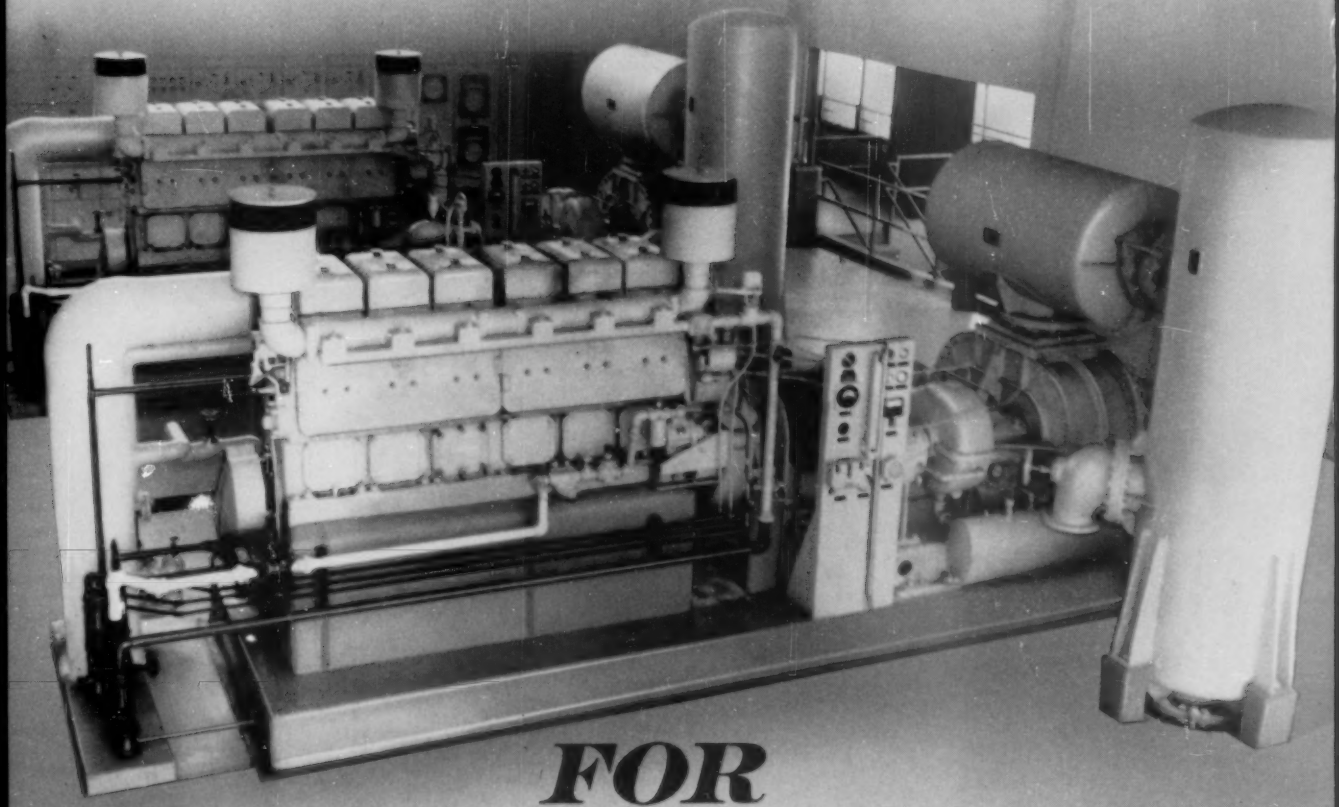

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6 Michigans for Baltimore Highway Dept.

City set for crippling snow storms, meanwhile speeds road repair, landfill work

Like many communities south of the Snow Belt, the City of Baltimore, Maryland, needs heavy-duty snow removal equipment only occasionally. Specialized units just aren't economical. Yet, at times, only their efficiencies can unblock a snow-plugged city.

Obviously, this need can best be filled by machines which are good snow fighters as well as good dirtmovers. Baltimore's choice is Michigan Tractor Shovels—six of them!

Snowbound . . . never again!

This vital selection was triggered by a "once-in-a-lifetime" snowstorm of two years ago. It stopped traffic for three days . . . kept most of the city's 982,000 people from leaving their homes. When streets were finally cleared—and the discomfort, inconvenience, and fire danger over—the City Government vowed, "Never again!"

Soon, they had written a 375 page master snow removal plan. Some 90 new plows were bought to attach to their trucks and graders. For fast clearing of the main trouble spots—405 linear miles, 1665 plow miles of principal streets and intersections—in came the six powerful, high-speed Michigans.

The main advantages of these units has proved to be their *dependability, speed,* and *versatility*. Equipped with plows, each four-wheel-drive, power-steered, torque-converter machine can clear a path 8 to 9 ft wide. With buckets—which interchange simply by removing four pins—units speedily load windrowed snow. And, in summer, they speed all kinds of dirtmoving and maintenance jobs . . .

Assigned to street crews

Five of the machines—all 2 yd Model 125A's—are assigned throughout the dirtmoving season primarily to road repaving and grading crews. They shuttle at traffic speeds from job to job, clearing old pavement, digging and loading dirt, handling road material, etc.

One Michigan speeds cleanup at three scattered sites

The sixth Michigan, a 2¾ yd Model 175A, handles cleanup and coverage at *two* landfill garbage dumps *AND* cleanup around a city incinerator. This 27 mph rig shuttles between sites under its own power . . . dozes and covers an average of 100 truck-loads of street dirt, tin cans and incinerator ash per 8-hour day.

"This rig—and our other Michigans—are doing a fine job!" says George V. Walters, Baltimore's general superintendent of highways. "The machines were purchased and delivered Sept 24, 1958, and as of this date we have had no tire troubles. Distributor service (from Paving Supply & Equipment Co) is excellent! We think every city could do well to investigate the fast, high-speed, dependable Michigan line!"

On typical landfill assignment Michigan dozes refuse over bank. Later the 2¾ yd rig will dig bank-run gravelly sand and carry it in for cover. Compaction is achieved during normal dozing both before and after coverage.

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